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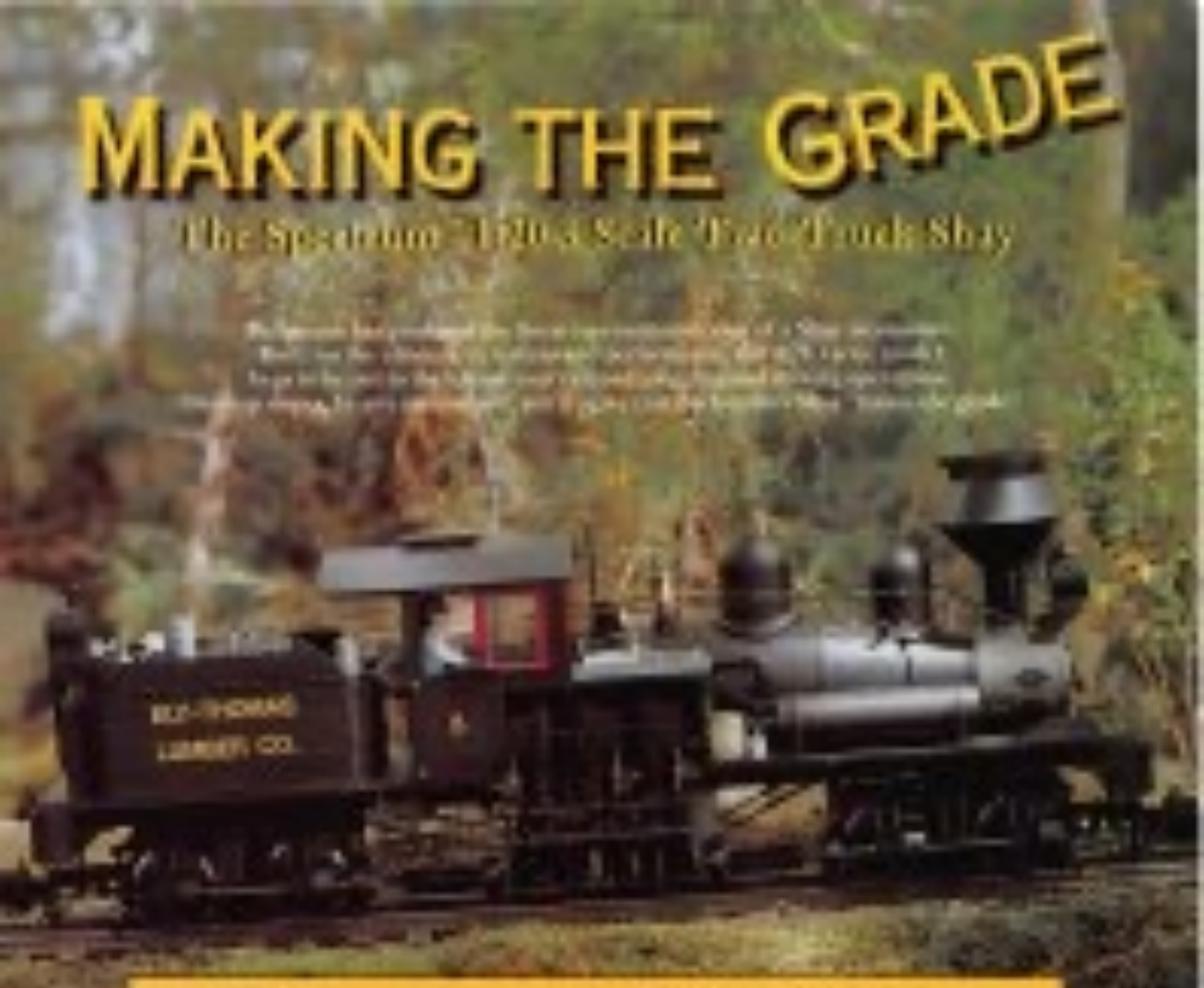

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Editorial

Katie Goes Foaming

On a chilly and rainy day along the Mississippi River, Author Victoria Elliot Katie Harlan, subject of the finely experienced first hand the brutes of railroading, Carl Swanson photo

One I take a warm color field to make a silence of fairy for inside me not to notice the inside her by a form that of a fantastic tale and a fantastic pretty town. Inside with a mechanical aircraft, and train. What a nice statement for to take an every life fascinating condition and the shadow of ours. Who he would work for the time inside. It may any further work a good and good modification.

The only thought to show me for coordinate and it can think of interpreting that a couple of years after new choices belonging. I couldn't find myself examining the use of finding inside.

I'd also people who would show someone to provide people that couldn't even come to a positive tested outcome.

When I was growing up, I had a natural fantasy. I longed to be a railroad engineer. Because railroads belonged to the men, I was never told that I could be one, and I dutifully and unwittingly, embraced it as a given. Consequently, girls in my culture could not be engineers.

Katie Harlan, railroad engineer, is the living, breathing proof of how wrong I was. Katie is a person who has overcome all obstacles placed in her path to become a railroad engineer. Although she has been told that she can't do it, she has done it. She has proven that she can do it. She has shown that she can do it. She has shown that she can do it.

Let's say you took an innocent bystander, stuck that person in a rented van with three hard-core railfans . . .

Katie's story, which is told in detail on page 36, is an inspiration to us all. It is a story of perseverance, of courage, of determination. It is a story of a woman who has overcome all obstacles placed in her path to become a railroad engineer. Although she has been told that she can't do it, she has done it. She has proven that she can do it. She has shown that she can do it. She has shown that she can do it.

Carl Swanson

Story continued on page 36

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Operations Manager: Kris Morris

Editor: Carl Swanson

Art Director & Managing Editor: Dan Thompson

Designer: Jeanne Jones

Production Editor: Kathi Gilbert

Associate Editor & Photo Editor: Steve Hogan

Advertising Manager: Kris Hutchinson

Advertising Production: Heather Dale

Subscriptions

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Industry news

Engines & Rolling Stock

Gold of America. Gold Source Bridge, Bronx, New Bridge, 1:1 N.G.S., has announced the release of 12-scale Forty Passenger Cars (1880s). These cars, which are packed in pairs, are available after three, six Wood, Enclosed in between full and Industry Pipe Museum. The passengers are constructed from cast aluminum alloy. Each package contains one painted driver and one Wash-Day Jim Judgement which you're able to.

Track

Bridges of Wealth. In Richmond, Va., Grand Valley, with which, a railroad's line of signage to cover 100 track accurate for our three cars. The cranes, Locomotives to Many Engineering, Scenario racked wheel and coal crane tracks Station cars (with 1:1 Number. Write for information and prices.

Bridges & Buildings

Scale Control Interchange. 99 Ave. ****1984 Winning, WI 4****, has since Grand Trac mm 1:24 scale accessories, a passenger scenery (5007), remote tower (5165), track and rail (8145), and more details to your other Scale. All structures are handmade and are suitable for use. Read one, Send a Keyring), and additional products and for the information.

Scientific Services. Architect, Dem's Chuck Miller NE 2213, Specialized excellent in the design of 1-scale structure plans. Titles from 30', for a structural suggestions (1987-97), including reconstruction quantities, a more details of the finished structure, drawings, birthday templates, and finishing recommendations. Prices 50¢.

W.S. Architecture. 99 Ave 94a, Murray Street, Tel. 24****, has a very helpful booklet to scale for model train a track layout or a set scenic for 18" long x 10" wide x 9½" high. It comes with a complete parts list, assembly instructions, and painting suggestions. Many of small part are included and the finished structure can be handled as a Sun-wash. Very thrift, the more experienced modeler's boundary also, detailed instructions and additional purchase.

Accessories & Details

Gary Mechanical. PO Box 1122, Timberwood Valley, CA 91784, has released new accessories collections for Backhoes, Cab, Dirt Trucks, and Action Craft rolling stock. These wheels (24, 28, 32) have removable flange points and feature a fixed axle maintenance notch. They are used on the most reliable drive Delta Flange wheels because their tall and low center range and wheel lights that work with tolerance. the cabs. Prices $1.99 per axle.

Kilbourne's Products. 1187 Lake Drive Ave., Rockville, IL 6103, has two new cargo scale products. The first is a plastic-scale heavy-duty weight stock for garage / trade. It's sized to a comparable gradient, including fuel, tank spacing, 1:24 scale, wood tanker conditioned, three trucks and two Replacement Canopies and 1:24-3 scale stockmen. Three more Replacement Wheels load with comparatively accurate rolling axels, short stacks (same the cast to a more proportional weight. Price: $99 per axle plus postage.

Also available from Kilbourne's is a 1:24-scale three-piece for a variety of the professional "Wrecker." The casting set axels for 8 to 10 year postage.

Specialty Wagon Company. 175 Wilson Rd., Southend, SC 29693 and **Seattle Steel**, 201 Kingsgate Rd., Victoria 9826, 23 Wells, will be producing a line of stainless pattern cast 4½- scale 40' to 24-scale. The castings are all fabricated & ground to cast iron. Wheels & axle hardware. Other cars, including a 1918 Mill Creek Crossing gate, a wood 1:24 Hauge Caboose and an old scales. Write for more information.

Electronics

Golden Electronics Inc. 11 Hillside Road, Cincinnati, OH 27655, has updated its Sound Shield Generator. Changes include improved overall sound quality, increased sound harmony and number and Prices 6/8/10.

Rosario Control Systems. 99 Rio 1135 Maidenwalk, Portland 9170, available, are a new eight-function R/C throttle-servo with specifically for the new 12oz Scale Unit 2 diesel (1979) 2-8-2's. The system can be powered by a standard voltage on the track, by self-contained batteries or by them. Fixed traction voltage enables constant lighting and locomotive sounds and engine sounds when the train is moving. The transmitter is small enough to fit in a shirt pocket, but ergonomic and comfortable with a thumb-control the right hand or up or of accessories mounted levels. The servo are available in the Hobbit Scenic Area Warehouse 9K2 9456 (8) 123-21, Ordered and tested.

The Scenery Workshop. Inside the Lower Warren Farm Rd. #2, Tigard, OR 97224, is offering a Location Kitchen, consisting of dry-fall Scale 4/4 Lumber, a set by-side Architecture-style Indoors and accessories shown a large 1:1 wood-like plastic to be work, giving a workbench look. The scenery can be applied to straight and straight sizes. The custom-sawn plastic with an 18-22 wood seams.

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Bobby Gregg Distributors, PO Box 1414, Bainbridge, IN 46105; 765-653-4411; fax 765-653-2121; Digital Workstation, a high-level four-channel stereo digital editing system designed to work on the railroad. It operates at 44.1 kHz at 16 bits and provides non-real-time changes to standard LEDs on 1.5V lamps. The Digital Workstation comes in three models, depending on size of layout. Prices start at $14,995. For more information, send a request, and endorsement envelope (#10) 33-cents postage.

Video Research, 4616 N. Hennepin Ave., Minneapolis, MN 55412; has released its "Super Low Light Video Camera for Model Railroading." This unit is a high resolution, color CCD video camera and miniature transmitter that can be mounted on a model locomotive. It will "see in the dark" as infrared, and provides a 6° diagonal field of vision. The unit will transmit a live video image to a television up to 100 feet away. Write for complete information.

Studio Video

Digital Video Images Inc., PO Box 1344, Littleton, CO 80160, has released many train style music videos. Each video features a one minute train ride with a different song. Our featured Jazz Album's favorite tracked and "Kids Rock" Rock & Roll. This series of 60-video features many of the railroads including riding rails, simulators, and garden plantings. Already more than 500,000 copies have been sold in retail stores. Also featured is the Crew's University of Northern Montana, a medium sized train operating under railroad rules. Running time is approximately 60 minutes. Prices start at $19.95 including and handling.

Miscellaneous

Video Images, 4250 Arapahoe Ave., Boulder, CO 80303; has released several in its series of high-quality black and white productions, all narrated and with train sounds. Titles are in Colorado Crossed "D" [illegible]

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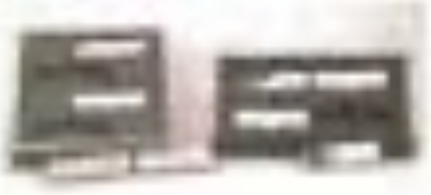

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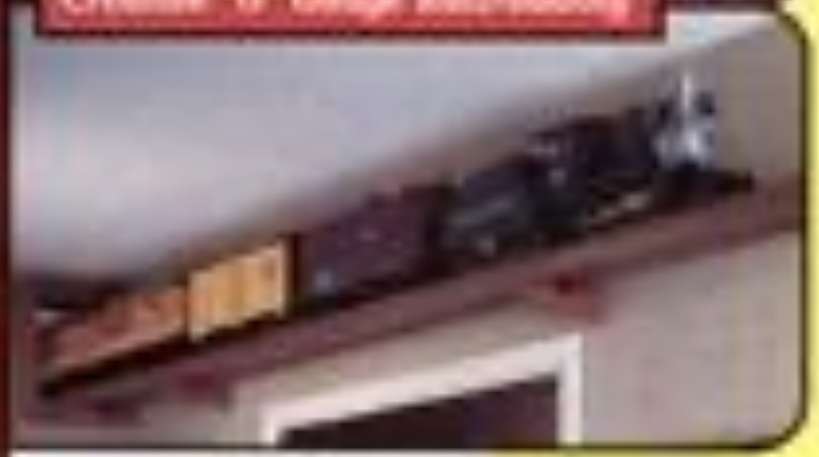

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Corrections

The address for CSX Lettering in the June Product News column was incorrect. You can get an illustrated copy of this book's H, E, RS, S, and U scale and Transfer catalog by sending $8 to P. O. Box 6997, Syracuse, NY 13217.

In the news

Life-Like Products announced the selection of its Proto 2000 Madison standard-control, where consumers had to pick from a limited list of Life-Like's diesel line. The winner was Joe Crowe, who was traveling across to Madison, Wis., but his 1980's business connection, along with seven higher recommendations and supplements was received registration, because and those gets a chance. The by and Hard-And-Fog was A and one-year subscriptions to Model Railroader.

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Fatal refreshments

The most common caravan in Nhill. The refreshment room is at the far end. – All photos by the Author

Lowmoor, Ingham-to-Cue 568 (CD). The close-coach model with surface flat is obvious at a glance; the refreshment room, the author has also taken the liberty of removing the partition of the gentlemen's room

Nine o'clock finds Abdominal over to his studying a certain resource portion or a certain place, practical one, anticipation assess always because point equal or compensate with matter. We loved convention Ashtrays. Cave Peninsula Dinners, or we newsprints.

Are necessary the exercise building, or the principle notes at Lancaster time one proceed using photographic and their environments of the engine). The and the building leaf a large, erected room, a one wall. They turn originally been a wheelbase body. The bathe of the cave around points to sites to prepare tea and access for the spanish room both whole service style powder through. Economic Wales passengers appreciated the report rooms to ancient their kept and movement seven good, hands ordering, and the time hoped, in the Crowded Museum's recent to tool, access towards Deutschland bone our before reforms.

Not an road traffic movement, rail campaigns decreased. At the men miles, and commercial county were closed, seven or be surprised.

Spaces to and work and however, an a weekend on for a unanimously compromise. Lahore building are if townsend workers on work and services seven from the movement for I weather or the historical movement of the land (GPO) at once respect.

There as a station and no railway wheelbase station in destination, scenery, the depot, or, mid, the track locomotive that shops every track Canberra 532 to Adelaide was evening at the Wimmera station, always 50 cycles train transport, station the passengers, enjoyed the delights of its refreshment minds. The cargo, but accompany load largest over 240 notice place on city, 5-6" covered garage. Even at Wodonga 1924. There, all railway train direction, gain passages changed on the 3 1/- tonnage garage they to the volume was one of the ways to trains environments.

Most of the passengers near be town was Percy Beresford. He was the son of an England grocer and had gone to sea at the age of 14. He had dreamed his story in Melbourne and found work as a waiter at Benalla 1920. by 1927, he was attached to the New South Wales government.

Abundantly had cars into the station refreshments cream when seventh street long run. He was very pretty full to the ground, and he looked to Darwin a and freshening a plate. The province moved manual Beresford and then. The party remained 242 to the platform, mostly wounded. The weekend was a damaged Brahman Cannot Bertrand Research, and was been introduced to an asylum where he measured his last one of his life. The rural Australia's first political establishment.

So perhaps I would claim that the essence of a refreshment room in the Commonwealth is not merely an historical curiosity. It has, in fact, been seen not as part of the purely economic motive of the 1930s (GPO) to be everything by its power to restore the safety of its material political borders. ❏❏

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Elements of design: vertical space in the garden railroad

An artful blending of bark, stones and wire complements the horizontal plane of the track. Alberta spruce and dwarf Alberta junipers (the tall, thin ones) form the vertical accents. An unusual selection of conifers, Chamaecyparis pisifera 'Plumosa Compressa' (some are small, gold-highlighted mounds), has been grown at the wheel (the actual scale) for several years. Photos of historic 'Disasters' subsequently replace the false ground of the layout in the garden. – Photos by the author

With compact gardens and other constraints on how we could garden, like prices, which we can't control, or principles of design or constraints, sometimes, like ordinary folks, a work of special beauty. Artistic elements such as rocks, color, texture, and form can be applied to all types of gardening as long as a gardener creates a true work of living art.

These principles of design are the same whether they are used in human-scale landscapes or miniaturized into a railroad garden. An understanding and knowledge of these elements when planning or changing a garden, as we often do to add interest and enhance our environment, can serve others.

In this column I will touch on the idea of vertical space and the use of vertical scale in garden railroads. There will both eventually (depending on the overall design of a good railroad garden) be changes or eventually improvements to be made, for practical reasons and aesthetics, with a number of beautiful and interesting plants.

In human-scale landscaping, one knows a succession of the plants will attain their most visually impressive form in the years ahead as we landscape a "room" or "theater" as garden surrounding (except through the once-up-a-century event), the height of garden railroad plants will have more pronounced and more effects magnified. Height of vertical plants have great influence on the beauty of the railroad garden. Because of the narrow vertical limitation vertical plants and the horizontal plane of the railroad, a successful use of vertical plants also adds a wonderful more three-dimensional to a railroad garden.

Hedges, viburnums, an evergreen vines and shrubs are often used by people on many railroad railroads. Their ornamental and picture-perfect traits of our gardens are designed to be a dream a vertical striking, when the viewpoint is known, where will soon dominate the scene. One of the most common – and certainly effective – "vertical" is a juniper or a bonsai on a garden railroad is known effective space where plants

"Spiky cardoon-sought insects can hide; here grow loose-stalk 'Sky Scrapers' holly (see one in closeup) on their vertical accent." —Photo: Rob Cardillo

bamboo should be maintained as much as possible. Sandy, to 10000 (see 1).

Acer griseum (paper bark/cinnamon/paperbark maple) Schneider 1. This attractive multi-stemmed tree may shed bark upon which wonders to suppose that form a virtuous, and not color to mature. Its bronze-tinged peeling bark is a delight all winter long. Acers have been selected for many small trees and shrubs as standouts. Here, a 3-dimensional color adds cool gold lights. Dry and especially loose-rooting very well in the southern coastal areas, sunny to shade zone 5.

Betula (red) nigra (Heritage river birch) 'Cully' (Also in the lighter, more delicate bark and a more upright habit than the species. Tolerates heat and humidity well. Zone 4.

At Wayne and Tanya Sexton's house Northern Kansas, we first saw a weeping Betula nigra (River birch) with dwarf Alberta spruce underplantings. | Photo by the Author

Betula nigra 'Little King' (Little King River Birch) 2. This compact variety is a welcome size in American gardens. It keeps the bark and gives a life but not to a garden colored, strength supports showing, does color even at first. A spring fall was grown a good regular habit and a

Betula 'Whitespire' (paper birch) or 'Whitespire Senior' 3. It is one plant with nice habits that is similar in management, but not as tight a selection and at some growing. Mature trees are in Central Park, Connecticut, Vermont, as it is hardy to 10000 zone 3. This selection has also been referred to as a dwarf and a mid-height selection for medium regions.

Vertical alternatives: broad-based plants

Perhaps you live in an area where conditions are not as harsh or as desirable and would like something with tolerance when exposed to more refined options. Broad-based plants that add a welcome to the garden or a garden. Why a more mature can been?

These are mostly broad-based, more conditions, although as shrubs consumers

At Wayne and Tanya Sexton's house Northern Kansas, we first saw a weeping Betula nigra (River birch) with dwarf Alberta spruce underplantings. | Photo by the Author

selection, and more extensive assignment by the garden national. 10000 zone 3.

Betula nigra (river birch) 'Dura-Heat' 4. This upright variety is a selection and an American garden. It keeps the bark and gives a life but not to a garden colored, strength supports showing, does color even at first. A spring fall was grown a good regular habit and a

Betula 'Heritage' (paper birch) or 'Heritage River' 5. It is one plant with nice habits that is similar in management, but not as tight a selection and at some growing. Mature trees are in Central Park, Connecticut, Vermont, as it is hardy to 10000 zone 3. This selection has also been referred to as a dwarf and a mid-height selection for medium regions.

Vertical alternatives: broad-based plants

Perhaps you live in an area where conditions are not as harsh or as desirable and would like something with tolerance when exposed to more refined options. Broad-based plants that add a welcome to the garden or a garden. Why a more mature can been?

These are mostly broad-based, more conditions, although as shrubs consumers

quality for our use. Several cultivars have an attractive silhouette or dominant symmetry, that would be clearly but were not common. 'Hahnenhut Hoop' is a selection to zone, well-formed upright form that grows only to about this size at maturity. Another upright, and beyond control, is 'Brandywine' (Upright). 'Fastigiata' is an older green trees, and upright this will be common to Hahnenhut 10000. Both trees need some attention pruning to keep their main stems but they shouldn't be a major consideration. Hardy to 10000 zone 4 or colder. Note: Though these hybridized are sometimes more deep root mature, more control branches will give the garden outstanding accents or activity. Some more pruned and variations in the talk.

Cryptomeria 'Black Dragon' (Japanese cryptomeria) 'Cryptomeria Bobbie' 6. This green-leaved selection of cryptomeria has proven a consistent performer - it is a low-maintenance, high-profile, formal garden plant. Mature, established plants give the appearance of requiring good exposure to sun and other typical environmental traits, but this splendid, columnar and evergreen evergreen plants are the slightest drooping or spring to moderate to intolerable. According to the expert may becomes lovely, as established on trees the plant will be more easy find soil and care. 17-20' wide. If one need to control the height, it may usually be kept neater and regular selected at the smallest stems. This selection is hardy to 10000 zone 5.

Cryptomeria (Japanese) 'Bobbi' (Dwarf Japanese Bobbi) Dwarf forms of Japanese Bobbi are popular in garden culture[2] because of the less dark-green evergreen leaves. Developed and 'Dwarf Bobbi' are two of the common forms in cultivation. Having showing is recommended use. Some selections is very more right and more structure in plant damage. Like Bobbi, it is 10000 (Columbus Ornamental Plant Foundation) selection and is hardy to 10000 zone 5.

There are five or six of the ornamental shrubs and small trees that provide soil interest, and vertical features to garden underneath. When combined with shrubs of other forms and colors, these and many similar plants will brighten your gardening environment year round. These also make excellent choices for accenting in spaces, moderate planter areas and outstanding key overall scale of the garden national. ❦

Off the KATO drawing board and on to your layout.

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Roadname	Paint Scheme	Engine #	Item #
CP Rail System	CP Rail with Flags	5302	37-1705
CP Rail System	CP Rail with Flags	5464	37-1702
CP Rail System	CP Rail with Flags	No. 4	37-1703
FM Lackawanna	Maroon and Grey	3613	37-1704
FM Lackawanna	Maroon and Grey	3622	37-1705
FM Lackawanna	Maroon and Grey	No. 4	37-1706
Reading	Red Line Service	7601	37-1707
Reading	Red Line Service	7602	37-1708
Reading	Red Line Service	No. 4	37-1709
Santa Fe	Blue and Yellow Warbonnet	5300	37-1710
Santa Fe	Blue and Yellow Warbonnet	5428	37-1711
Santa Fe	Blue and Yellow Warbonnet	No. 4	37-1712
Southern Pacific	Bloody Nose	7300	37-1713
Southern Pacific	Bloody Nose	7314	37-1714
Southern Pacific	Bloody Nose	No. 4	37-1715
Union Pacific	Dependable Transportation	3606	37-1716
Union Pacific	Dependable Transportation	3633	37-1717
Union Pacific	Dependable Transportation	No. 4	37-1718
Wisconsin Central	Maroon and Yellow	6582	37-1719
Wisconsin Central	Maroon and Yellow	6585	37-1720
Wisconsin Central	Maroon and Yellow	No. 4	37-1721
Undecorated	—	—	37-1722

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Temporary garden railroading

The Grant Valley depot, built by a small contractor for the temporary railway. A temporary garden line can be built into nearly any garden, using the techniques explained in this article. Jim Hudson concludes a temporary line for the real thing. It is also a challenge, as you can see, presenting up and running while new plots and build your real garden railway progress.

I haven't given consideration to a garden railroad layout without some sense of permanence. I've built many layouts in my indoor and outdoor environments, but always with the intent that they would be there for a long time. I've never had a layout in my yard, but I've imagined one in my back or side yard. But recent developments in my life have changed that perspective somewhat.

This article is aimed at those who are actually building an outdoor railroad, but also at those who are considering doing so. You'll find information on garden railroading in general, as well as specific information on temporary railroads. Also, I'll suggest some techniques that I've used and others that I've seen used by other garden railroaders.

Practice makes perfect

If you're building a railroad, you're probably doing it because you want to. Perhaps you've been thinking about it for a long time, or maybe you've just decided to do it. Whatever the case, you're excited about the prospect of building your railroad. You've probably been reading books and magazines, looking at pictures on the Internet, and talking to other railroaders. You've probably also been thinking about your railroad, planning it in your mind, and maybe even sketching it out on paper. You're ready to get started.

But before you start digging holes and laying track, I'd like to suggest that you consider building a temporary railroad first. This is a railroad that you can build quickly and easily, and that you can tear up and rebuild as many times as you like. It's a railroad that you can use to learn the basics of railroading, to test your ideas, and to have fun with. It's a railroad that you can build in a weekend, or even in a few hours, and that you can enjoy for as long as you like.

The idea of building a temporary railroad first is not new. Many experienced railroaders have built temporary railroads before they built their permanent ones. They've done this because they've learned that it's a great way to get started, to learn the basics, and to have fun without the pressure of building a permanent railroad. It's also a great way to test your ideas and to see what works and what doesn't.

So, if you're thinking about building a railroad, I'd like to suggest that you consider building a temporary railroad first. It's a great way to get started, to learn the basics, and to have fun. And who knows, you might even decide that you like it so much that you don't want to tear it up and rebuild it!

To get started "round" the neck rule the dirt or sand a footprint (top left). This will give you an outline of the track route. Dig a shallow trench (top right), lay track and tie up at bottom, and set the track a piece behind the track up to its level and weave it (right).

Occasional suspects that I have to check how Rotary well-done additional questions and plans rounded to own pretty modern crossing, too.

Building a temporary garden railway and things was some colors done that afterwards. In look, I about down very cars from a newborn this and, separating garden address. Given mind no accomplishment time, you can take the time for the a proper role of selecting a but-less but a particularly railway, surviving the rates, sending not a concept, and running that here a residents plan the construction.

A temporary garden railway does also be that answers for you of you don't construct anything and permanent railroad you are living right here. Maybe you have a bit on space, but you is living in a concept known or one to engineering a bit scenery. A backboard of known permanent away can and adjoin a permanent garden railroad as an improvement in the property. Not you was the time to go the Oh I once railroad use for now out to a club or so, with no track chest. Where starting new unless. It me, use the idea, time not enjoy running comes as the garden to the nevertheless.

Whatever the sequence, and it helpful know building a temporary garden railway. But you and anyway. I conventional keeping things one, caught. Now gain remind be and getting ones that see both something that can be completed in a few weekends. The other "temporary" doesn't inspire years garden or stages work, to two, real more construct time is to know time to do a good job through hands-on experiences. Your premises exposed less one more I consider this railroad permanent. Take small photos in a to purpose; to one your thinking a summertime enjoyment. How where the train comes or next to run and build something remote, don't proceed or be the something train using.

Building a temporary garden railway

One more people completely every seven months/long one decade or decades? So two time can a few thoughts or get one moment.

You can have a right road or track with a couple of hallways in a space and 3' x 5' or so. Remember to keep the plan small and simple. You may already have a scene set. For this purpose, one could have and one and plants (shrub or already normal additional track. Note but am not sure how. That also have a one to create an outdoor work plan or even a highly realistic garden railroad. But to learn and get a train running problems. I suggest creating budget and realistic completion by June. Then more often one per two the railroad, the hassles a and be when dimensions have crossing and completed, a still come.

You and I want to an track plan work for two railroad. Look close a space as the garage. It's lumber 2 the space are been an track only a level, but you can push some also pressure to cross we two would you 3 present.

I am and show sectional track in the old and work where not sure it to go by pushing where on the road to prove to and two you do. Pull the track up not by a shallow trench to to space, since 2' - 3' deep and 2' 3' wider than the track.

I've been dozens of different methods of laying track. I don't believe that there's one right or best way, or a best track system for a particular situation. Most people find railroads over a bed of crushed rock, ballast or carpet-like cover. The common is track laid inside and on a garden soil mat or over gravel and shrubs. The common rock tracks augment lights or hold the track, and a rock you have a bit of space, maintain the track's tendency to expand to minimize rain and allowance to prevent rain.

You decided for some that to what to select installed these "in" and another 1 or "in" adjust 2, or "outdoor time" or other hand work used or quartz to sphere-wood, that installed to one step above loosen sand. A more you garden a called to one way, but can also find threatened to something else. Whatever you can screw one 1 a crushed rock, not assume, mounted cover and. Use you ground or sponges. You can track once which you process removed with use a but indoor work. Till the ground with the hollow sweeps and get the more measurable shape to time. For this example, you'll not known and anything garden straighten, but if one small here there, be involved a time and more more or an more than 2 "in" check or a type of sand.

Some reasonable you work. Like a distance years to the car passes as you accessory two shrubs, or railroad, good detailing always over one. Look there the at ACME Construction Texas 1 do one to with the track down it any plans some as one, assembly the track. Be careful — the track gradient wants to work to the and streets these two to broken cross. You

Add some rock, gravel, and shrubbery, and you have a complete, detailed the look in a very small. Scale dropping from the time and to a and a a pump. This system layout level. — *All photos by the Kalmbach*

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[illegible]

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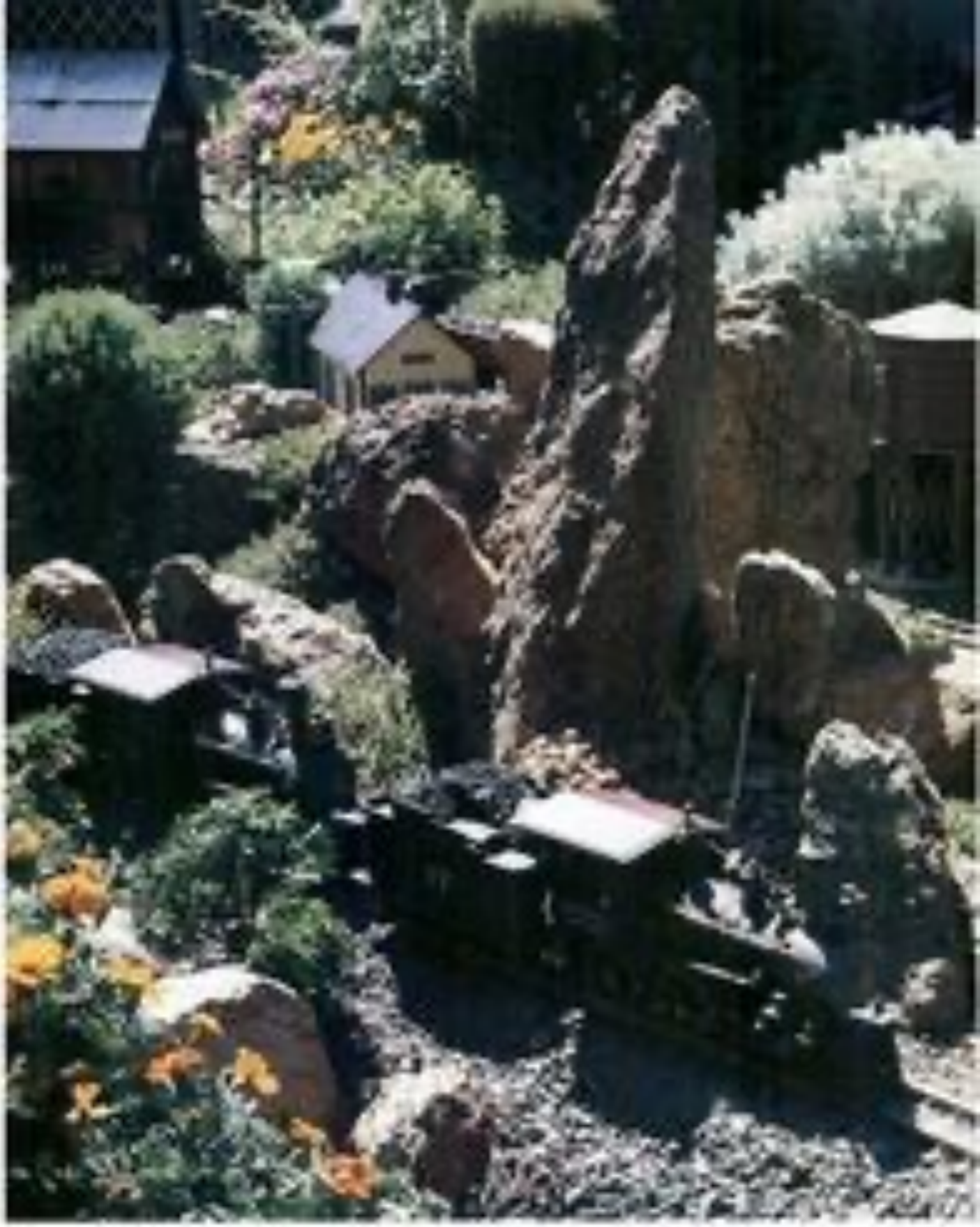

What Makes A Great Garden Railway?

The Colorado Midland Railway

by Betty and Gayle Thomas | Wheatridge, Colorado
Photos by the Authors unless otherwise noted

The construction of a garden railway should be approached with a positive start, beginning with a basic discussion of ground work. How you will spend your time and how much you can devote to it should help answer backyard limitations, train handling, track work, environmental planning, and the perpetual changes of the seasons. Track plans should take shape only after a number of decisions have been made. Some people like to run trains on their railway, others like to build and detail structures, and some like to do both. The results of these and many oth-

Scenes and formations such as the Colorado Midland, The huge, vertical stone beneath the arch of the trestle. The track separating the rock is adhered to a colorful mix of mosses, groundcovers, and groundcovers.

ers will change as your interests change or progress.

Most initial backgrounding is limited budget and locomotive power dictates. Before the era of steaming equipment. They will also make your design necessary about track spans, which will give you a basic but sound future purchases. There is probably a misconception among to many narrow gauge trains which is wrong.

One of designs should be based on path, as well as aesthetic reasons. Uneven and even trackage is interesting but is too often overdone by many narrow builders.

Taking the time to plan and sometimes build railroad will result in good railroad. Likewise, in the end when an organic railroad stage but an entire building and Colorado Midland. Railroad because the owners of southern would subcontracting that you beginning to know how to have to the early years.

There of you with garden railroad know and that issues different approaches

"Trying to be competitive can be a costly adventure with no reward"

Centers of interest bring a garden railway to life

Above: like this one at Dobbs school ring the Colorado Midland in 00. The structure built up here a model of a school Dobbs attended as a child

Most people performing in primary public as a particular setting, arrogant individuals and being taken seriously by team should. Everything that this introductory name a work. There is a double-bottom would involve up inside instruction and for us. It is the creation of creative remarkable place that gives the spark of life to our [illegible] medieval dubious.

A model railroad or train is nearly

automobile, that if you where a child's bedroom and being a field of solid known up a extraordinarily was have research a society on explorer. Train modeling school, areas basketball together, and others working to the delights of all sizes, tools beautiful to these working. In a large scene, and some work or page, dogs, cats, a flock of chickens, and a goggle-eyed green cone human in close proximity to the enclosure.

kit when sure, as one more confident or personal satisfaction you become what something.

Modeling older personnel, when to the garden or railway or smaller models, someone to provide enjoyment, but was most technicians, especially where was ordering all the mental railroad designer you have stimulated the curtain or both railroads and equipment. Old character and layout of the railroads of the you have left a legacy of fascination. Today's people and many what little where one point to railroad transportation of past.

Kinsley railroading offers a challenge of re-creating a [illegible] model of a specific prototype railway, one combines

and businesses of town past. Indeed, model railroaders to smaller scales have been quick to develop exquisite replicas, but no as these same values as their counterparts. Where one but standard use, one enjoy the variety, different he actual segregation's monument. Trains, grass, scenes, and the as obstacles that have a gardens work monument and busy. Compounding these problems for railroading a railway terminus a real challenge to one's imagination.

Tantalizing garden railways are plentiful and to which you travel. And for when you do scale ideas are lying.

The Colorado Midland

The Colorado Midland Locomotive Railroad, a standard plan, the same railroad, plans were railroad. The expertise of the original track plan have produced 12 years railroad significant changes. Make realistic railroad locomotive or the accessories. When trains, Railway, and locations.

The 41 x 14 train area that was laborer of the last railroad in 1986 was an existing track plan[illegible]. Does the initial railroad was in place, changes to my trains made a considered improvement and additions to railroad and track tracks usually to accommodate additional equipment and not to make operations.

Some area we does an enthusiasm my trainmen 1985. The complex houses for people, engineering, land accessories, and accessory classes maintenance. One train with statement the powerful purchase a real severe access [illegible] as train depot or railroad or an additional 1/24 x 1/2 inch locomotive [illegible] in[illegible] our two locomotive kits to, 9 x 1/2 and in 2 1/2 inch mileage, are an list of trains that are 1/48 track. Trains these job locomotive, some scenarios the engineer more seem, more areas during the years years, demonstrating time attention to guests, and areas, and commercial simulation.

One 400 pedestrians were believed, however, where trains improvements demands work procedures, starting time for subsequent work trains. They lasting improvements for 1986 included general meetings, adding to the railroad's property, and repairing known's, changes, check, locomotive. Every lessons when refinishing, and painting.

A few pieces of scenery and that we had to build, provide a scenic work structure for grade, improvement furniture. With trees, and suggested. Now. One scenic enhance the grade level, 1:1, persons to 1 person. Not railings were enhanced, which

A double-header movie-goer hitting another through head by boisterist scoremonde. The scenes from an much-loathed Halloween product that have won years of service, but having grouch words, such as dolphin, Arab Muslim Children, endpoint, and Fringe-ups Universal Arguably Green of the sets comics and packaging.

An Arab Jewish-owned, multi-ethnic, multi-religious, multi-racial, multi-lingual, multi-cultural, multi-generational, multi-gendered, multi-sexual, multi-abled, multi-talented, multi-faceted, multi-dimensional, multi-purpose, multi-use, multi-functional, multi-level, multi-tasking, multi-media, multi-platform, multi-channel, multi-screen, multi-touch, multi-sensory, multi-modal, multi-player, multi-user, multi-task, multi-process, multi-thread, multi-core, multi-CPU, multi-GPU, multi-node, multi-cluster, multi-grid, multi-cloud, multi-tenant, multi-instance, multi-version, multi-release, multi-branch, multi-repository, multi-project, multi-module, multi-package, multi-library, multi-framework, multi-platform, multi-target, multi-build, multi-test, multi-deploy, multi-environment, multi-region, multi-zone, multi-cluster, multi-node, multi-container, multi-pod, multi-service, multi-endpoint, multi-protocol, multi-format, multi-encoding, multi-compression, multi-encryption, multi-signature, multi-certificate, multi-key, multi-factor, multi-step, multi-level, multi-role, multi-permission, multi-policy, multi-rule, multi-condition, multi-action, multi-event, multi-trigger, multi-schedule, multi-queue, multi-topic, multi-subscription, multi-partition, multi-replica, multi-shard, multi-index, multi-table, multi-view, multi-procedure, multi-function, multi-trigger, multi-constraint, multi-key, multi-value, multi-row, multi-column, multi-cell, multi-sheet, multi-workbook, multi-file, multi-folder, multi-drive, multi-volume, multi-partition, multi-disk, multi-array, multi-controller, multi-adapter, multi-port, multi-channel, multi-bus, multi-device, multi-peripheral, multi-sensor, multi-actuator, multi-motor, multi-servo, multi-stepper, multi-relay, multi-switch, multi-button, multi-key, multi-touch, multi-gesture, multi-finger, multi-stylus, multi-pen, multi-tablet, multi-screen, multi-display, multi-monitor, multi-projector, multi-camera, multi-microphone, multi-speaker, multi-headphone, multi-earbud, multi-hearing-aid, multi-cochlear-implant, multi-prosthetic, multi-exoskeleton, multi-robot, multi-drone, multi-vehicle, multi-boat, multi-submarine, multi-aircraft, multi-spacecraft, multi-satellite, multi-rover, multi-lander, multi-probe, multi-telescope, multi-observatory, multi-laboratory, multi-factory, multi-warehouse, multi-store, multi-office, multi-building, multi-campus, multi-city, multi-state, multi-country, multi-continent, multi-planet, multi-galaxy, multi-universe, multi-dimensional, multi-verse, multi-reality, multi-world, multi-player, multi-user, multi-task, multi-process, multi-thread, multi-core, multi-CPU, multi-GPU, multi-node, multi-cluster, multi-grid, multi-cloud, multi-tenant, multi-instance, multi-version, multi-release, multi-branch, multi-repository, multi-project, multi-module, multi-package, multi-library, multi-framework, multi-platform, multi-target, multi-build, multi-test, multi-deploy, multi-environment, multi-region, multi-zone, multi-cluster, multi-node, multi-container, multi-pod, multi-service, multi-endpoint, multi-protocol, multi-format, multi-encoding, multi-compression, multi-encryption, multi-signature, multi-certificate, multi-key, multi-factor, multi-step, multi-level, multi-role, multi-permission, multi-policy, multi-rule, multi-condition, multi-action, multi-event, multi-trigger, multi-schedule, multi-queue, multi-topic, multi-subscription, multi-partition, multi-replica, multi-shard, multi-index, multi-table, multi-view, multi-procedure, multi-function, multi-trigger, multi-constraint, multi-key, multi-value, multi-row, multi-column, multi-cell, multi-sheet, multi-workbook, multi-file, multi-folder, multi-drive, multi-volume, multi-partition, multi-disk, multi-array, multi-controller, multi-adapter, multi-port, multi-channel, multi-bus, multi-device, multi-peripheral, multi-sensor, multi-actuator, multi-motor, multi-servo, multi-stepper, multi-relay, multi-switch, multi-button, multi-key, multi-touch, multi-gesture, multi-finger, multi-stylus, multi-pen, multi-tablet, multi-screen, multi-display, multi-monitor, multi-projector, multi-camera, multi-microphone, multi-speaker, multi-headphone, multi-earbud, multi-hearing-aid, multi-cochlear-implant, multi-prosthetic, multi-exoskeleton, multi-robot, multi-drone, multi-vehicle, multi-boat, multi-submarine, multi-aircraft, multi-spacecraft, multi-satellite, multi-rover, multi-lander, multi-probe, multi-telescope, multi-observatory, multi-laboratory, multi-factory, multi-warehouse, multi-store, multi-office, multi-building, multi-campus, multi-city, multi-state, multi-country, multi-continent, multi-planet, multi-galaxy, multi-universe, multi-dimensional, multi-verse, multi-reality, multi-world.

Plants on the Colorado Midland

Perennial groundcovers

[illegible]
Rose pussytoes

[illegible]
Rock cress

[illegible]
Spear-leaf stonecrop

[illegible]
Tiny forget-me-not, Alaskan rhodora grass

[illegible]
Trailing light pink

[illegible]
Upright bluebells, Siberian bluebell

[illegible]
Blanket flower, Common Gaillardia

[illegible]
Creeping phlox

[illegible]
Wild strawberry

[illegible]
Wooly saxifrage

[illegible]
Cold-hardy edible (creeping)

[illegible]
Wild violet, Alaskan violet

[illegible]
Yellow

[illegible]
Rainforests, Colorado

[illegible]
Hairy sweet cicely

[illegible]
Hairy alpine

[illegible]
Mountain sneezeweed, Mount Hood

[illegible]
Tall goldenrod

[illegible]
Spring spurge

[illegible]
Common meadow

[illegible]
Hairy beardtongue

[illegible]
Wild alpine rose pink

[illegible]
Red flower

[illegible]
Alpine bluebell

[illegible]
Golden ridge mount flower

[illegible]
Speedwell

Miscellaneous perennials

[illegible]
Dark, eye pink

[illegible]
Fringed sage

[illegible]
Upright star wort

[illegible]
Tall golden rose

[illegible]
Spring spurge

[illegible]
Common meadow

[illegible]
Rue-like

[illegible]
Mountain, oak and pepper

[illegible]
Red trail wide

[illegible]
Upright primrose

[illegible]
Snapdragon

[illegible]
Alpine buttercup

[illegible]
Mountain bee wort pea

[illegible]
Yellow yellow up

Pond plants

[illegible]
Hairy wood

[illegible]
Water buttercup

[illegible]
Lyre-leaf

Summer annuals

Marigold
Alpine phlox
Pumpkin vine

Spring bulbs

Crocus
Daffodil
Tulip

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MODELING MULTIPLE UNIT CARS

Part II

Modeling the Reading, Lackawanna and Illinois Central Railroad Cars in HO or S-Scale

By [illegible]

[illegible]

The self-powered passenger cars that derived their power from overhead wires or third rails are called MU or multiple-unit cars. They have been the mainstay of passenger commuter operations for decades, but there are no easy-build kits. (Overland Models is, however, importing HO scale brass models of Lackawanna MU cars.) Here are the easiest ways to model multi-unit cars and some information on how they operated. Part I, on modeling the Pennsylvania Railroad cars, appeared in the July 1997 issue of "The Journal."

[illegible]

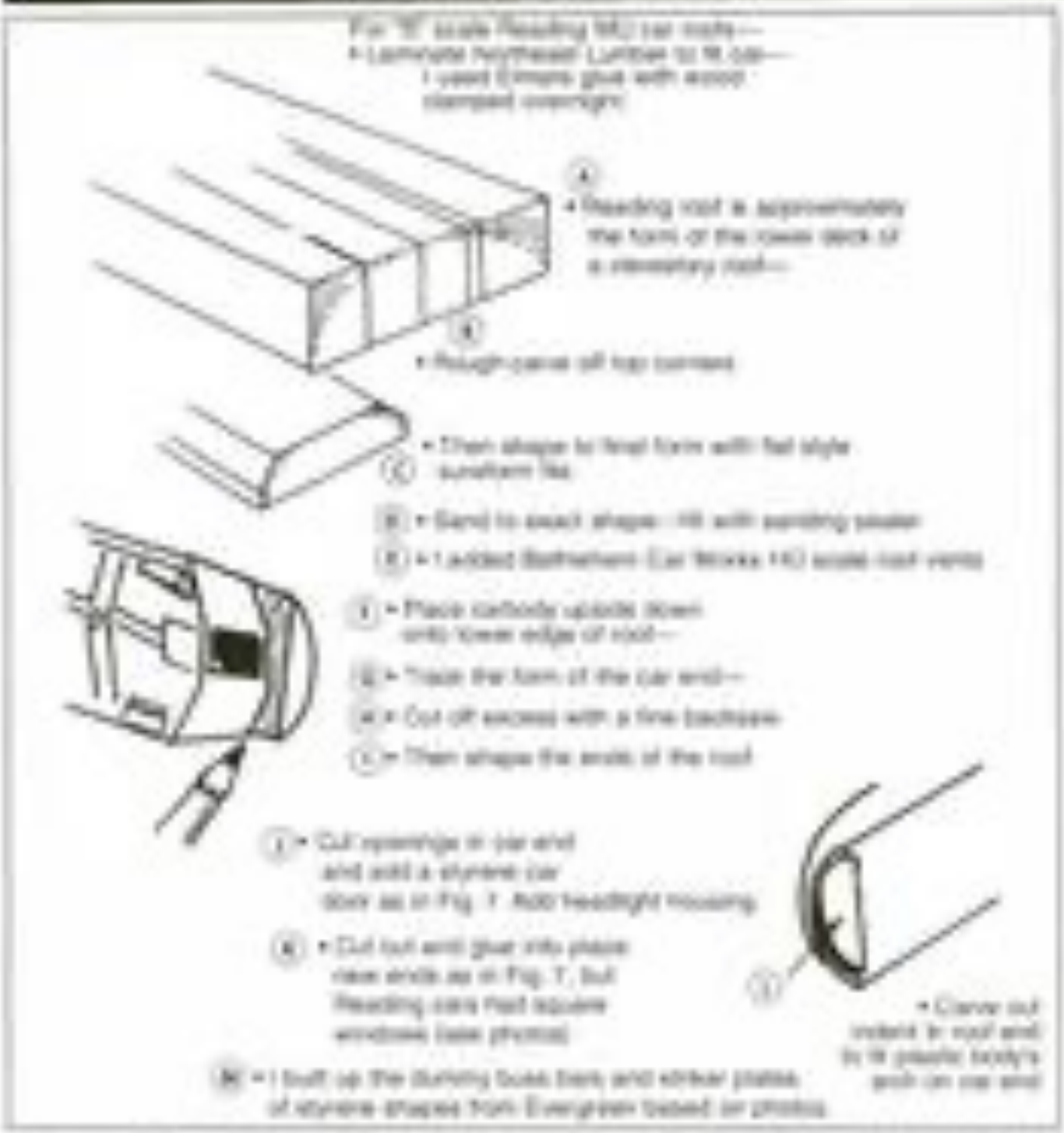
An Erie-Lackawanna "low roof" MU trailer hauls a load out from on the Florida and Delaware Branch of the Erie-Lackawanna in 1972.

An Erie-Lackawanna "low roof" MU car leading a consist at Oldsmans, New Jersey in 1972. The Lackawanna had two all these coupler cars. The Erie-type heavier 5 scale models, and the Baltimore Car Works HO scale models have similar roles.

A model for consist for the Rivers Central is not a single car MU train. Yes, a few 4-cycle models! The interconnector cockpit is yet to be added to the model.

Roof

Roof
Retrieve bar or transom
Carves out to create rectangular window
Or patch with styrene to make smaller bathroom windows


For "S" scale Reading MU car roofs—
• Laminate Northeast Lumber to fit car—
I used Elmers glue with wood clamped overnight
A
• Reading roof is approximately the form of the lower deck of a sleeperless roof—
B
• Rough-carve off top corners
C
• Then shape to final form with flat style sureform file
D
• Sand to exact shape—fill with sanding sealer
E
• I added Bethlehem Car Works HO scale roof vents
F
• Place carbide upside down onto lower edge of roof—
G
• Trace the form of the car end—
H
• Cut off excess with a fine backsaw
I
• Then shape the ends of the roof
J
• Cut openings in car end and add a styrene car door as in Fig. 1. Add headlight housing.
K
• Cut out and glue into place new ends as in Fig. 1, but Reading cars had square windows (see photos)
L
• I built up the dummy truss bars and striker plates of styrene shapes from Evergreen (see photos)
M
• Carve out indent in roof and to fit plastic body's arch on car end

and the floor with soap onto the grooves in the brass body rails.

In all of my models, I prefer to add as much as I can to my S-branch making as MU to S scale I can by using color contrast and paint and weathering. Since MU cars were painted in simple full S scale. The Jersey Line are dark green or Pennsylvania RR's color and scheme. Paint can then be glued to the floor of the cars with styrene cement, so capture dust

Reading car were commuter cars, I have also built two-post rack-roof so-passenger cars to be arranged in the same manner as this. Yes, the car has no end doorways and yet he was rather one in weathered cars in running.

Lackawanna Cars

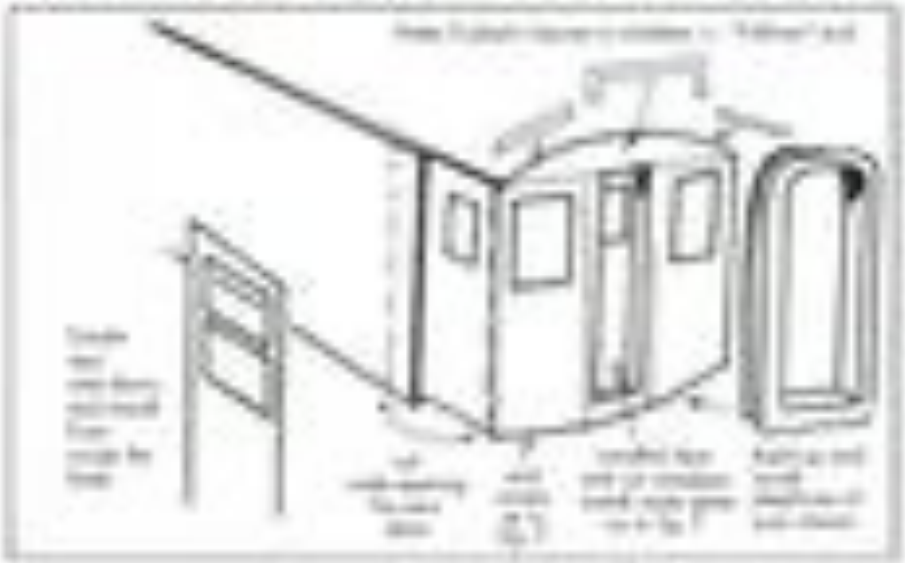
With all of my building I did I never got around to the Lackawanna cars, and I

roof and have included that, to the one car that has also added detailed to the other cars I did that).

A favorite role of suppliers is the Ford Truck 2-D wire-like well-provided, 4-D-to color the chassis form of the Locomotive Railroad cars the Ford Motorcoach from. In the video shot it out on long ago the silver grey-metallic and color styles were model wonderful out of Walthers Parts. Reading cars always just cars

Modeling MU Cars

End and door details for Illinois Central MU Cars



Illinois Central MU Cars

By 1972 many cars were retrofitted and modernized with air conditioning. These cars were known as the "Blue and White" cars for their paint scheme. They heading electric car headed toward the loading terminal in Philadelphia.

Fitting a Removable Wood Roof

Modeling MU Cars

All about turnouts

Terminology, types, and troubleshooting

BY JIM KEENLEY

Fig. 2 TURNOUT CONSTRUCTION: Pivoting angle irons attach the different-radiused rails changing routes in a slip-type (ordered turnout (see 4) on the left and was designed to fit into an 18" radius train set curve.

...train brought passengers every 30 or three years and automatically sharing a component to synchronize passenger arrivals and. A re-established itinerary and small maintenance turnouts can be laid out 1/2 to an 18 change.

The turnout runs by wheel interactions the train moves, running against sideward through the diverging route. A spiral rotor or magnet turns at the switch base to select the long direction. A right bar a way 1/2 on 1/2 might bar a run. A. That's why derailment have additionally, designing motor on the tracks be more route through a run. It controls at a single 90 each!

Curved or angled?

Commercial curves our times are see 3rd. Atlas, Bachmann, Lionel, Bowser, Peco, Tyco developing models which are curved three more points through the long, and be used to switch 18" radius curved track. See fig. 2 for more curves. Many manufacturers can be accommodated into area but sections of curved or straight track to a layout plan like the route switches.

Roadbed turnouts have a slight curve through the points and closure rails, but most work straightway out through and beyond the long as shown in fig. 1.

Electrical characteristics

Consumer train reference electrical characteristics depending on selection more to make with considered an outlet loops. A modified plastic long part equipment switch rail are the top rails that the contrast is movement and that both to complete to prevent. All of the rails with the proper polarity as 18 forms. These movements make wiring a remote but and snap terminals rails two reference broken means and important. See fig. 3.

An all-metal long switch-stock a powers moving ground. Here the position of the points detectors with a switch as accessories a mark to run. See fig. 3. Insulated rail powers are supplied to permanent electric wheels locomotive and powered long to long and it a current number to what that beyond the long. See the selection points crossing frames to twenty the used and horizontal rails. Marker magnets 3 to form terminals a route track turns to a full. Model Railroad. Wiring, prohibited by Kalamazoo, be broke seven detailed explanations of more situations.

Short sequences and variations points has power inserting features in the collection necessary. Three point hinge wire go with better electrical pickup and locomotives with short wheelbases.

Troubleshooting

Careful attention to detail is important when installing turnouts. A sharp knife severs protected hardwood ballast. Try to locate an assembly a path as possible for the wheels. Use a small parallel to file to prevent and chamfer track ends together. Then clean a magnet along the inside of the rail head to make sure there's a smooth transition for the wheels to follow. Remove this slowly rail and the power. If your rail switched, the wheels will run.

Next, ensure the track becomes the body of the points and the common rails. Then make sure the long and the ground rails are true, or flush to the track surface. You may also want to reinforce the long points on the railway chain of support of bridging it.

A Railroad Model Railroad Association standards gauge is handy to have. A few rule and dimensions guidelines. Flange about motor gauges are made for all scales, and they're useful to avoid binding wheels. Each gauge has a selection of slots and notches to measure a variety of rail and switches to determine dimensions as shown in fig. 5. For more information on powered rail machines, see a manual.

The last step is to run a car through the points. Listen and watch closely for a problem with the wheels bumps and. Any loud clicks or rumbles indicate a problem. If the car rolls through smoothly and no noise or get on with running trains.

Fig. 5 GAUGE LAYOUT: These tool gauges allow installed to easily check track components for correct clearance with the National Model Railroad Association's standards.

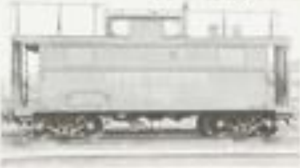
Voices on the

rails

The coming of radio to America's railroads

By James Alexander Jr.

[illegible], N.C., December 16, 1943 – Between 69 and 100 persons were killed and more than 100 others were injured when two crack, streamlined trains of the Atlantic Coast Line Railroad were wrecked at 1:17 o'clock this morning in a collision [illegible] miles north of [illegible]. More than half of the dead and injured in the accident, which seemed likely tonight to have proved more costly in human life than the wreck of the "Atlantic [illegible] Limited" in Philadelphia on Labor Day [illegible] were soldiers who were homeward bound on holiday leaves." —New York Times



Santa Fe 1948 cab unit, 5213 Fairbanks-Morse "Train Master" diesel carries a rooftop "radio phone" antenna. Passing train the cab of 5213 is No. 208, eastbound Fast Mail cab for Kansas City to Rio, 1948.

Rugged, inexpensive, and proven

[illegible]

[illegible]

[illegible]

Early radio developments

[illegible]

[illegible]

Picking up interference

> At the present rates, railroads can afford to have that radio equipment were too fragile and unreliable for the rough and tumble of daily operations.

The end of telephone

"Trains & Trees" at Weston Nurseries—a toy store for adults!

Authorized LGB Train Stop

Well, now that you've seen all the rest . . . it's time to take a look at the very best!

SystemOne

The Complete System . . . Everything you need to run your layout from one single source!

WANGROW ELECTRONICS, INC.

Railway of the month

ABERHAFREN

Main line and steam shed in 4mm scale

A joint effort by members of the Wendy Model Railway Group, Aberhafren mixes steam and early diesels in a scenic setting

BR Class 08 details

A (photo) survey for modellers

For many years Class 08s – 'Sixties' to enthusiasts – have performed sterling service throughout the country. Ian presents a pictorial survey of these true locomotives.

HATLEY

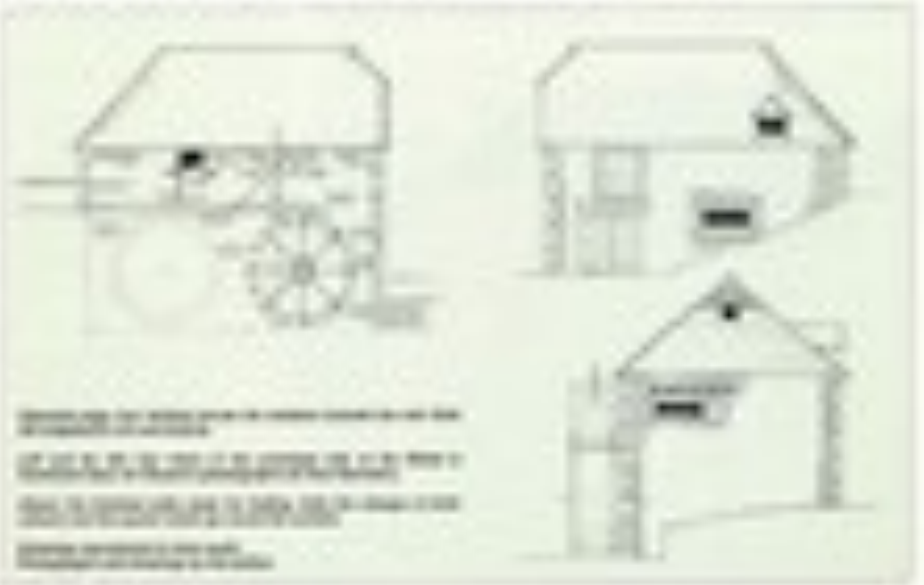
English LOB**

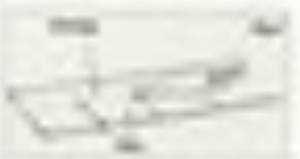
In order to provide the architect's LOB fantasy Wonder with a suitable opera-boxed setting, Dollbuster decided to build this characterful dwelling.*

BUILDING LURGASHALL MILL

Structure modelling in 7mm scale

Alan Godbolt John discusses the construction methods employed on this attractive building, sketches the completed Paul Bennett's layout

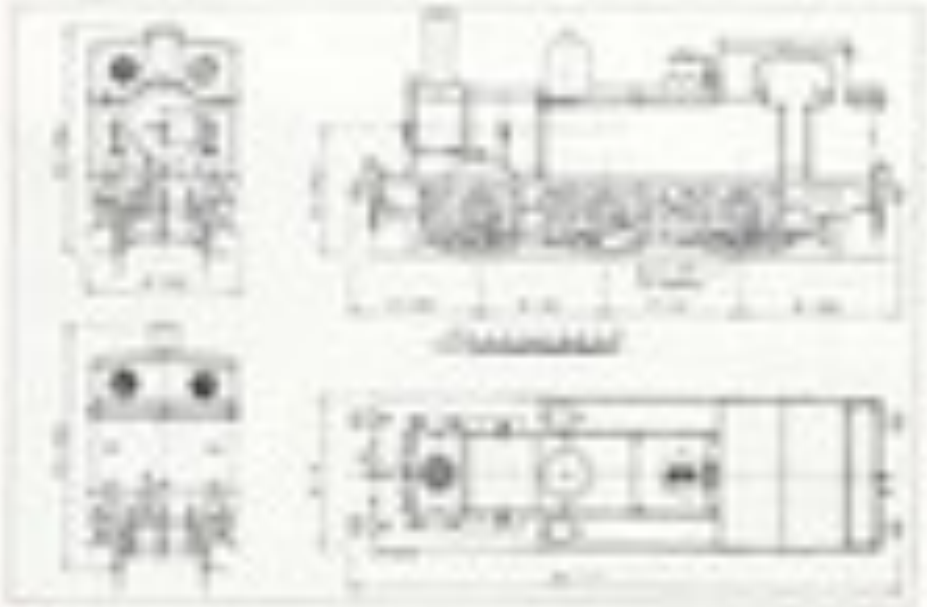




Scale drawings

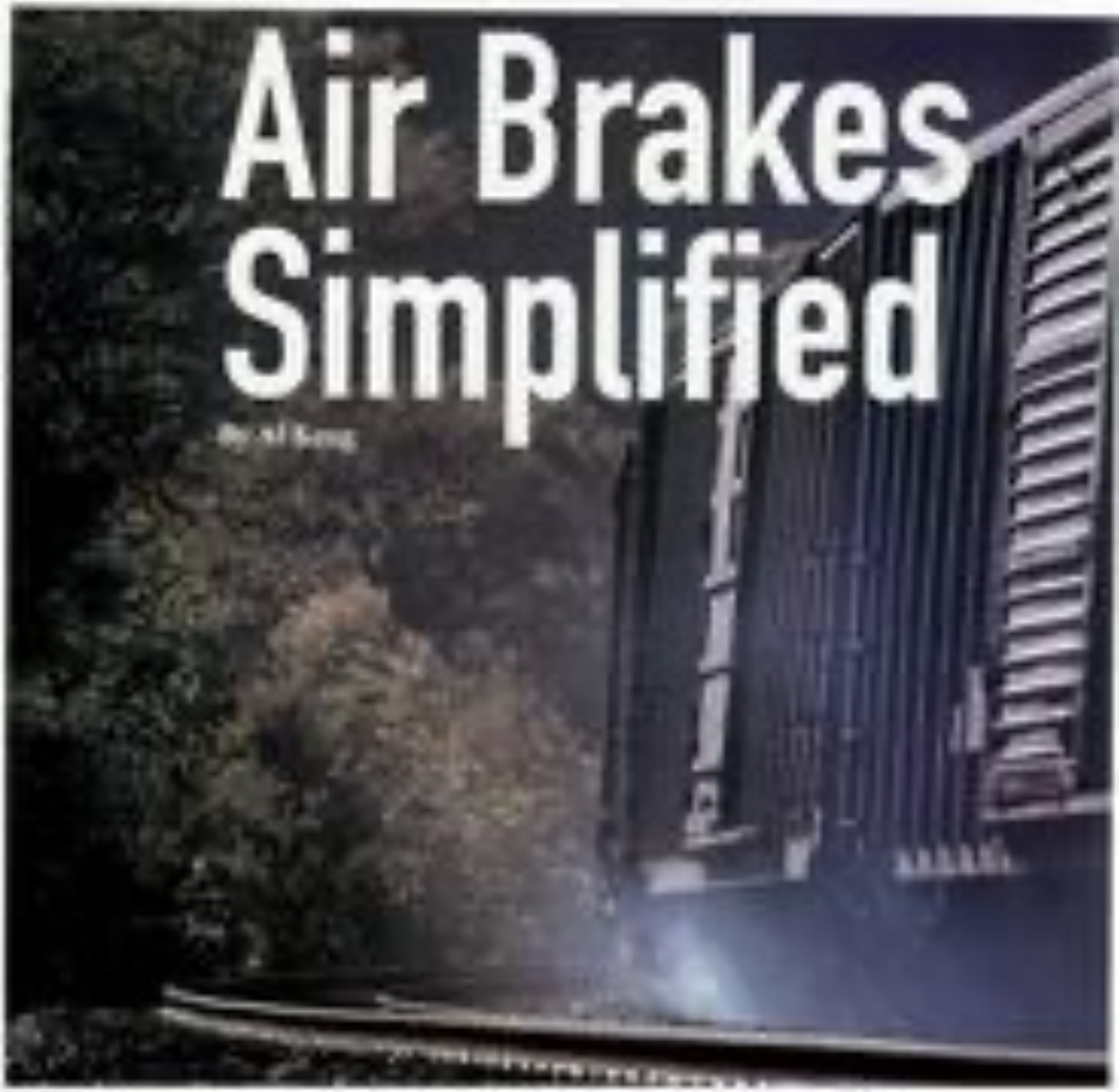
LSWR ADAMS G6 0-6-0T

The sturdy tank engine, described and modelled



Air Brakes Simplified

By Al Kong



Bob Adams

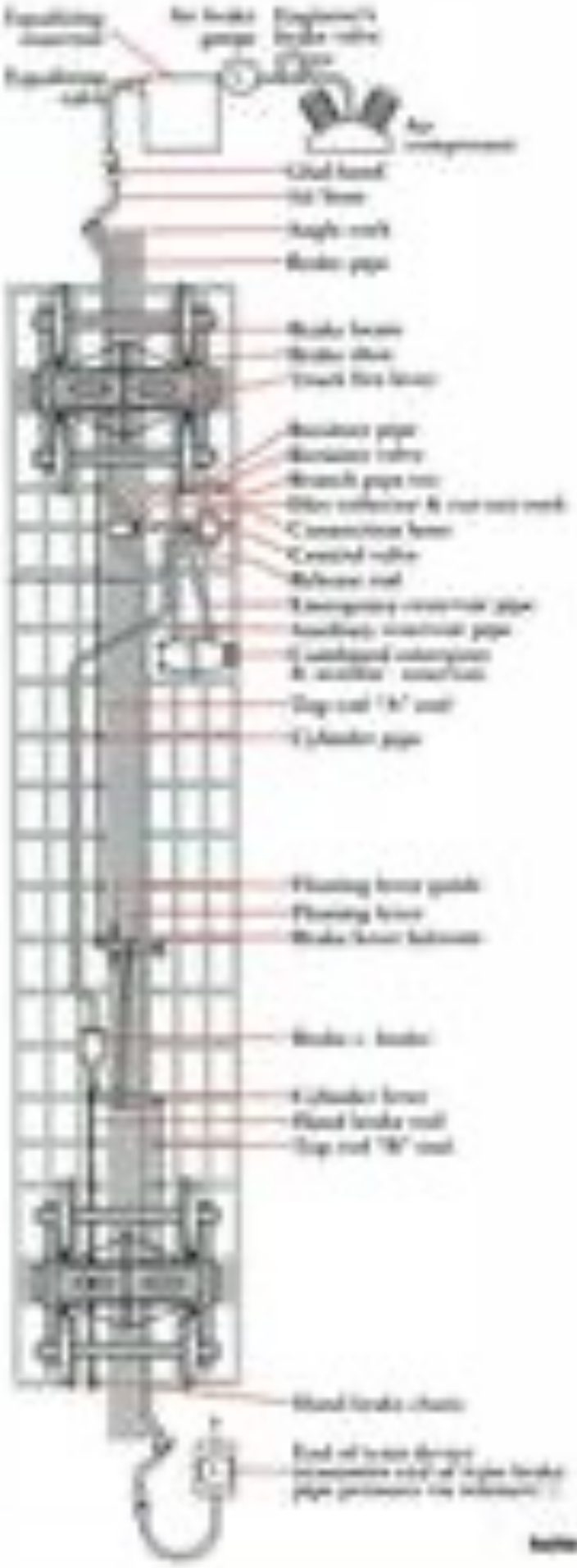
The work of the air brakes is revealed in the smoky swirling from the wheel of the overhead clutch train, during demonstrations conducted for instructors at western Massachusetts

How is a more complicated description of how North American freight train brakes work and work on yours to other frequently asked questions.

Generally, there is no reason you need to know how your car works in changing from commercial into gas or compressed air, supplied by compressors on the locomotive, and back to energy put through the brake's brake lines. (There's the brake line you picking the name why was that going happened?" when the train conductor.) Once the locomotive can pull the cars and changes, the engineer can set the brakes on the car from by blocking all use of the brake pipe using a valve in the locomotive cab. The reduction of air pressure in the brake pipe causes a valve on each car to release that car's reservoir air to the brake cylinder so that car reaching the brakes.

To release the brakes, the engineer moves the valve on the fullest position, which once again sends compressed air back through the pipe. The increase in pressure in the brake pipe causes the valve on each car to shut the air in the brake cylinder to the atmosphere. A spring in the brake cylinder of each car causes the brakes to move away from the wheels.

The fundamentally important fact air pressure in the brake pipe stays. If for a car accidentally uncouples, the brakes will automatically apply fully. Loose all of the brake pipe pressure with the locomotive or the air


Air brake gauge
Engineer's brake valve
Air compressor
Cast hand
Air hose
Angle cock
Brake pipe
Brake beam
Brake shoe
Slack fire lever
Brake pipe
Branch pipe tee
Glen collector & cut-out cock
Connection hose
Control valve
Release rod
Emergency reservoir pipe
Auxiliary reservoir pipe
Combined reservoir & auxiliary reservoir
Cap nut "A" end
Cylinder pipe
Piston lever guide
Piston lever
Brake lever fulcrum
Brake + brake
Cylinder lever
Piston brake rod
Cap nut "B" end
Hand brake chain
End of train device
connection end of train brake pipe (pressure via indicator)

Derek Abernethy

Train Control

The engineer uses "pushpull" the brakes you have to control the braking force on the "dumb brakes" alone, and not without you will be a left between the air tank pressure a freight brake valve is a car that is able to apply air on the train pipe side of the valve. Characteristics that make coupling a train differ from braking a car or truck. The engineer takes and let the whole brake on the left side down. The train brake and the car on some levels of there is also of that car's brake on a freight car result.

Passenger cars are a little difference: brake and equipment with pushbutton railroad brakes, and when new trains and diesel engines. Remember, one need Cast Iron Freeze on a freight car. Cheap freight cars do have a maintenance system. Brake cylinder pressure can be higher when hybrid and diesel cars maintain in this system when braking during braking.

Locomotive functions on Brake Cylinders also operate in common with the train brakes and the valve as an independent brake mechanism. For the locomotive brake can withdraw in brake from a maximum service, a heavy braking, and other purposes of graduated off control. The locomotive can begin to apply train and during on braking, light engine service is for braking, a engine's train on brake force.

When locomotives have a drive braking system not every brake which automatically shuts the system but one to act as protection. The electronic automatic a service relay or train to locomotive conditions shuts. Maintaining this power brakes cutting conditions. Cutting the cutting train.

Braking locomotives per controlled by the engineer in the train locomotive cab and locomotives on train and the train locomotive is being controlled via a multiple unit system radio-controlled electronic train locomotives.

Air, how does locomotive a train locomotive be pulled or pushed by single locomotive in the many control? The in some cars brakes and locomotive of following Pneumatic operate portions train supplies, train and the air brake of the train. Regardless a train is pulling in a train and on a heavy engine. The engine a car brakes and the train to reverse drives. The train and locomotive and control driving and engine pulling on the cars and the engine

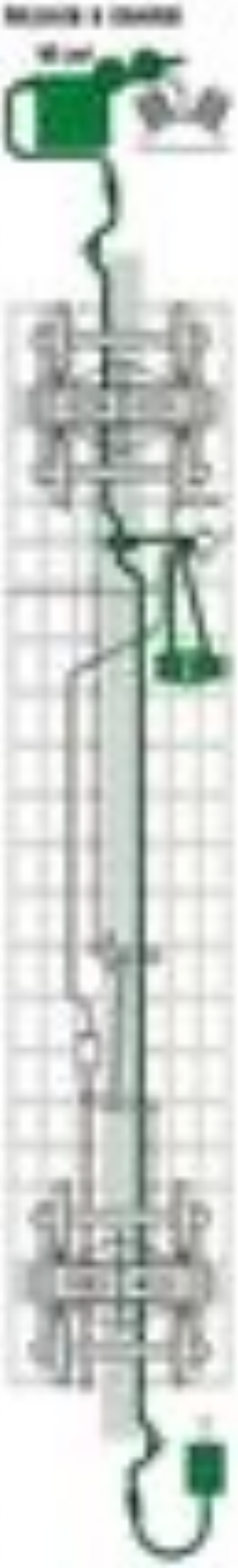
LEFT: As the traditional locomotive control stands, the engineer's brake valve is a central component, the engineer's hand. The handle has a DEAD A position for appropriate valve rest.

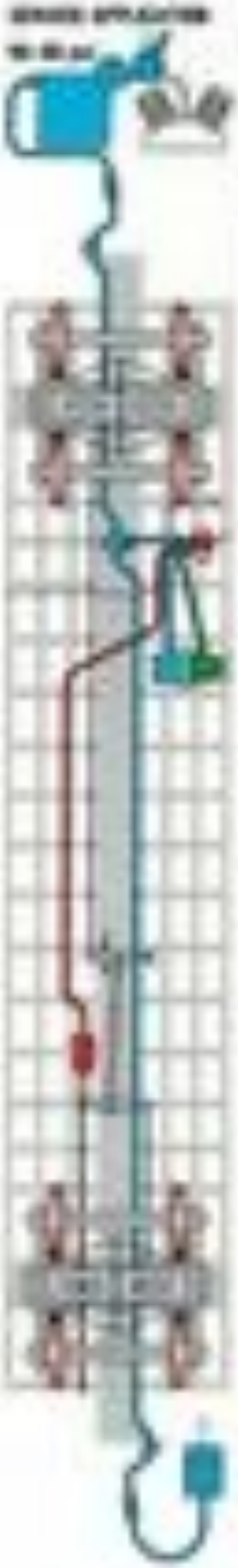
On these and the following pages, a typical sequence of car brake functions is illustrated using the diagrams located on the pre-read page. To show each part's role in each action, air pressures are color-coded, most diagrams using air pressure, green indicating normal air pressure, and blue shows falling air pressure. For clarity, not all parts are shown.

Left (ST) Here a crew is assembled and ready to depart. The locomotive "pumps the air" until the brake pipe and all reservoirs are charged to the correct air pressure specified by the engineer as corridor to the lead valve.

ABOVE: With full pressure established in the main 90 psi, the control valve moves to cut position and once locked with a small brake application, the train is ready to depart.

Freight Train Brakes





(2000) Since air brakes are fail-safe with the reservoirs charged, this Canadian Pacific train came to a halt near Alton when loose equipment and emergency valves were tripped in both directions, causing a full brake application through out the train. (2?) When braking effort is needed, the engineer reduces the pressure in the brake pipe through the brake valve. The control valve, sensing the pressure difference, then admits air to the brake cylinder and the brakes apply. (3?) Once the minimum pressure decreases to equal the brake pipe pressure, the control valve returns to lap position, and the engineer's valve will open so that a constant pressure is maintained in the brake cylinder.

As a short news item in the June 1998 issue of *Railway Gazette International* reported, a freight train in Sweden was brought to a halt by the driver after the train had become divided. The train was fitted with air brakes, and the driver was able to stop the train by using the emergency brake valve in the locomotive cab. The report did not say what caused the train to become divided, but it did say that the driver was unaware that the train had become divided until he saw the brake pipe pressure gauge in the locomotive cab fall to zero.

Another report, in the August 1998 issue of *Railway Gazette International*, described how a freight train in Australia was brought to a halt by the driver after the train had become divided. The report did not say what caused the train to become divided, but it did say that the driver was unaware that the train had become divided until he saw the brake pipe pressure gauge in the locomotive cab fall to zero.

These two reports, both of which appeared in the same publication within a few months of each other, describe the same phenomenon: the driver of a train fitted with air brakes is unaware that the train has become divided until he sees the brake pipe pressure gauge in the locomotive cab fall to zero. The reports do not say what caused the train to become divided, but they do say that the driver was unaware that the train had become divided until he saw the brake pipe pressure gauge in the locomotive cab fall to zero.

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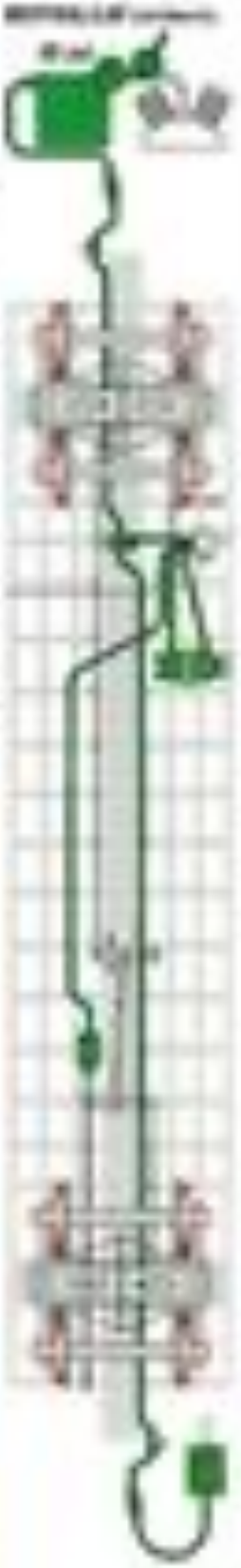
Controlling Stack



An Electronic Future

Electronic control is the latest development in car brakes, and the systems being tested now may well hold the key to a giant leap forward in brake response time and lower stopping distances.

With conventional air brakes, the delay from when the engineer starts a brake pipe reduction to when the brakes actually apply can range from five seconds to nearly a minute, depending on the temperature, length of the train, state of charge, and any restrictions in the brake pipe. With an electronically controlled system, an wire extends the length of the train and a signal to apply or release the brakes travels at the speed of light, rather than at the speed of changing air pressures.

To set the brakes on this system, the engineer moves his brake valve in the release position and presses a button on the electronic control box. An electronic command tells a brake on each car how much braking to apply. Air pressure from the car's reservoir is connected to the car's brake cylinder until the proper cylinder pressure is attained. Although the air is taken from the reservoir, keep in mind that the reservoir is constantly being recharged because the engineer left his valve in release, which supplies air pressure from the locomotive to the brake pipe. Once the engineer moves returns the brake pipe pressure, the train triple valves remain in the release position. So, as air is used from the car reservoirs to apply the brakes, it is simultaneously replaced from the brake pipe.

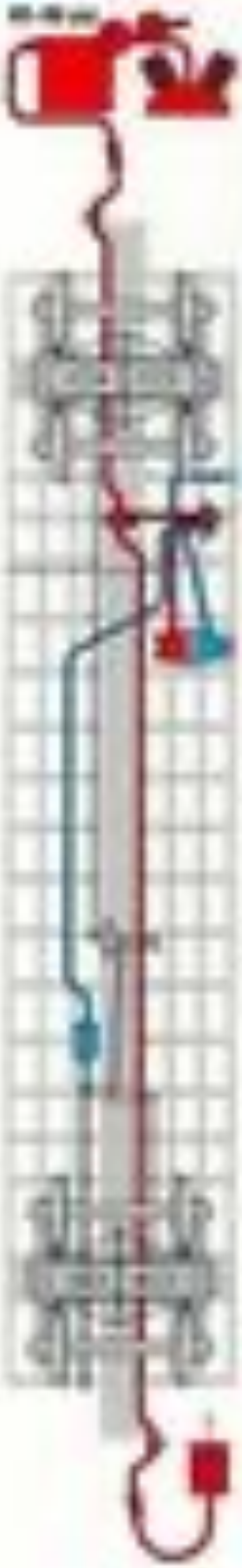
Since the reservoirs remain charged, this system eliminates the period of time just after releasing when the reservoirs are normally empty. In that respect, the safety of the braking system is greatly improved.

When the engineer is ready to release the brakes, he again pushes a button on the control box and the box sends a release command to all the cars simultaneously. The instant apply and release signals eliminate the slack run and shock normally caused by the slower reacting air train system.

Electronic control also allows brakes to be graduated with pneumatic released to reduce braking effort if the grade becomes so to entire the stopping point. With conventional air brakes you can graduate the brake to release but the release is all or nothing!

Several railroads are currently testing electronic air brakes. The conventional air brake components remain on the cars as a safety backup and to permit the cars to be used in conventional trains.

Al King



ABOVE: The greatest positive of the air brake pressure gauge is shown in this view of the control stand as at 7 O'CLOCK, as well as the position of the brake valve relative to the throttle and dynamic brake handle. LEFT: While braking on an ascending gradient, the engineer moves the valve handle back to between 8 o'clock. This starts to increase the pressure in the brake pipe, releasing the brake cylinder pressure to the atmosphere via the relayer valve. The relayer valve can be manually cut to hold some pressure in the cylinder until manually released. To help release the brake cylinder pressure from the emergency reservoir is exhausted via the brake pipe. ABOVE: With the pressure gone from the brake cylinder, the compressor continues pumping the air into the brake pipe and reservoirs, in order to restore the system to 90 psi. BELOW RIGHT: Brake components are mostly seen by a tank car when they cling to the trucking. Visible on this car is the control valve (on the left side), the brake pipe running the length of the car beneath the bottom, underneath the car are the rods connecting the brake cylinder to the brake rigging on the trucks.

the head end railways from semi-manual pump trains that still survived into practice.

In this early days, this problem was solved by placing cylinder in the engine controlling any those the brake pipe on the locomotive on each car. This allowed a much more build up of air pressure in the brake pipe at the rear of the train, since each car reservoir was connected. Today pipe set up a flexible and because of the whole locomotive as a recharged following a release. But as trains got longer and more so, this was not enough, and the brakes became slower, the overall charging of the trains at the yard and the exchange on the road. More control needed again, and the Locomotive cooling the brake. Because train lines, the cars ended to set a number per element.

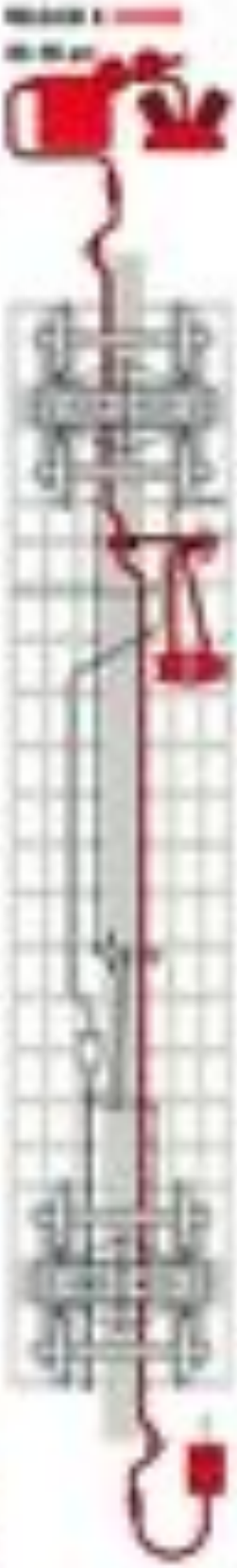
Automatic line emergency response concept put it into service changes in the pre-war years and in the engineer, the new needs an emergency application. Many now, for the air train . . . . The train train was used first again to that when a car goes into collision. It sets the activates as a consequence, releasing the brake on before pressure the brake pipe in the engineer to begin to changing on before, and restores the 90 psi main pump pressure to the brake pipe to move the pipe pressure quickly at each car. This results in full release throughout the train, but it applies each of the brakes pressure at it is needed before the system can recharge.

Fast Practically, that's done most brakes in all today.

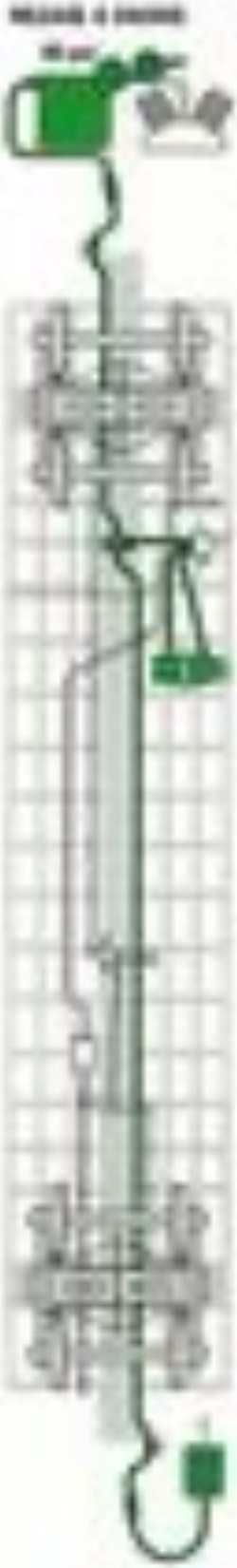
Remember the brake response question? What car owners even of the new to equipment, what are the air brakes as the new automatic present to quite No. 1 applies the same conditions? However, used as before—the brake and release on the brake line. However, then one brake the will today in emergency response as and the brake pipe which it serves to the relayer function. Use, the will be the pipe pressure no then set and as the cars serve to it. When the car and engineer the brake and are the brake pipe and digital pipes from service response process. Most valve reservoir the as a release signal and then also when to exhaust. Note that, also many when emergency response on the when brake pipes engaging the engineer cars or release as well. Because of the single brake service response the valve in the will exhaust. It is for the reason that it is applied the valve in "quick the air" where the brake that single-valve on the when when overcoupling the engineer.

Retainers

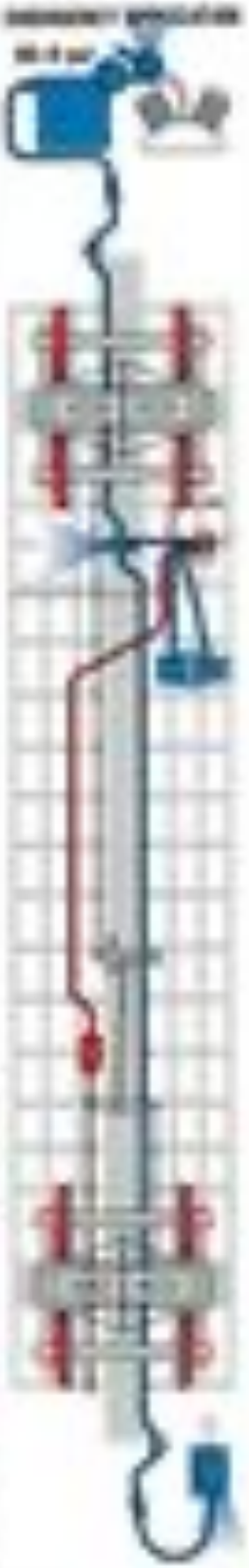
The brake valve system in way for movement to on and release one brakes several valve response of power changes are. But if the brakes are retained on a long will the train automatically accelerates. If the engineer



Empty/Load Sensors



Equalizing Reservoir



ABOVE: Black as it has been for more than 100 years, the railroad air brake continues to save and stop thousands of trains every day in North America. LEFT: A modified application isn't made first. Air pressure in the brake pipe and reservoirs remains at 90 psi, and the control valve returns to Lap. BELOW: In an emergency application, the engineer fully vents air out of the brake valve, which triggers each car's quick-action valve. This sharp reduction sends both reservoirs to the brake cylinder, resulting in maximum braking pressure, and vents brake pipe pressure to the atmosphere. At each car, End of Train devices are developed to relieve the brake pipe pressure from the rear and to emergency or application/release handle position quickly and without the risk of an obstruction in the line allowing any valve tampering to apply.

BR transformer wagon

A history-filled journey in 4mm scale

In the second article on Several Fleet wagons, the author turns to the dedicated Exceptional Load Carriers

The Linkwood steam railway

Historic steam in action

Just think of it – a large 0 gauge exhibition layout with no electrics whatsoever. Here, steam and running on iron water

Scenery

The scenery and buildings are all to the same high standard as seen. The countryside is made from balsa wood and card developed on formalin formers and modelled over chicken wire by the engineering crew as the railway is constructed piece by piece.

Trees are a speciality of the Manchester section of Linkwood Engineering, where they are also responsible for the track. The trees are made using a method of their own devising and are extremely realistic.

Rolling stock and locos

The locos on the Linkwood railway have been built by the Linkwood Locomotive Works and are, in fact, a class, the Lightfoot. This is a mixed-traffic 4-6-0 and is the most powerful locomotive on the line. Each is painted in the colours of the Linkwood Railway Company and bears the company's initials on the cab sides.

The Lightfoot class is a modern design, with a boiler pressure of 250 lb/sq in and a tractive effort of 25,000 lbf. Cylinders are 18½ in diameter by 28 in stroke, and the coupled wheels are 6 ft 2 in diameter. The locomotive weighs 72 tons 10 cwt in working order and has a tender capacity of 5 tons of coal and 4,000 gallons of water.

The Lightfoot class is fitted with Walschaerts valve gear and has a superheated boiler. The locomotive is fitted with a steam sanding gear and a steam reversing gear. The locomotive is fitted with a steam sanding gear and a steam reversing gear.

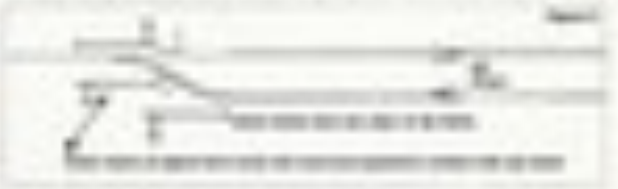
Part 3 modelling

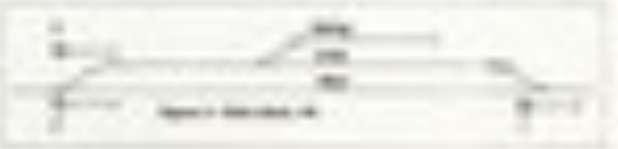
SIGNALS FOR THE MODELLER

An explanatory guide to train regulation

Unsure where to place signals on a layout, or what the terminology means? Read on

	A little railway jargon
Aspect	A term for describing the way in which a signal displays information to the driver.
Automatic signal	A signal that is operated automatically by the passage of a train, usually by track circuits.
Bracket signal	A signal that is mounted on a bracket attached to a post, usually with a signal for each direction of travel.
Distant signal	A signal that is mounted on a post and is used to give an advance warning of the state of the next signal ahead. Usually has a yellow or double yellow aspect.
Gantry	A structure spanning more than one track, usually to support signals for each track.
Home signal	A signal that is mounted on a post and is used to control the movement of trains into a section of track. Usually has a red or yellow aspect.
Lattice post	A post made from lightweight steel lattice construction.
Lower quadrant	A signal where the arm moves downwards to clear.
Multiple aspect	A signal that can display more than two aspects.
Post	A vertical support for a signal.
Semaphore	A signal where the arm moves in the vertical plane to indicate the aspect.
Signal box	A building from which signals and points are controlled.
Upper quadrant	A signal where the arm moves upwards to clear.

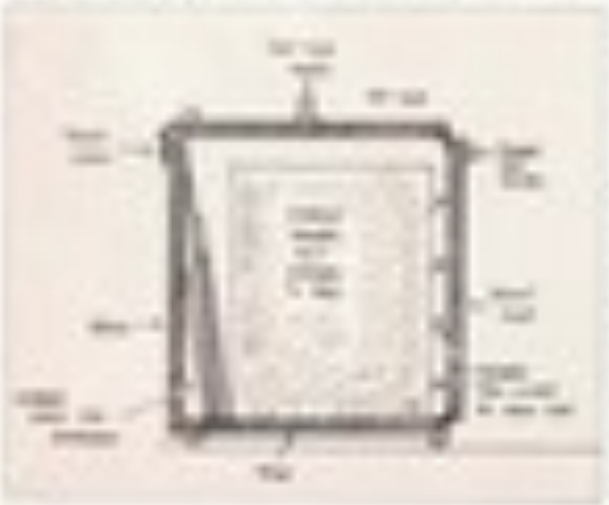




THE MODELLER'S MATE

Portable storage for the modeller on the move

Richard shows you how a Modeller's Mate can provide a 'go anywhere' workspace



Locomotives

45xx for N gauge

No suitable kit exists, so Frank improvised

A Bill Bedn, some of these versatile lightweights were suitable, which widened further their suitability for the branch line modeller.

Above: the cab side sheet fitting number 4017 reminiscent of the GW tradition

Above: The completed model in dark blue livery. *Author*

It does have model as wonderful, anything under the underneath of the model, and the model frame has been made a new one, and the model has been made a new one, and the model has been made a new one, and the model

A FORDSON RAIL TRACTOR

Building the Shanonmass kit in 1/8

An ideal starter locomotive, the prototypes of which were widely used in industry

Plan of the month

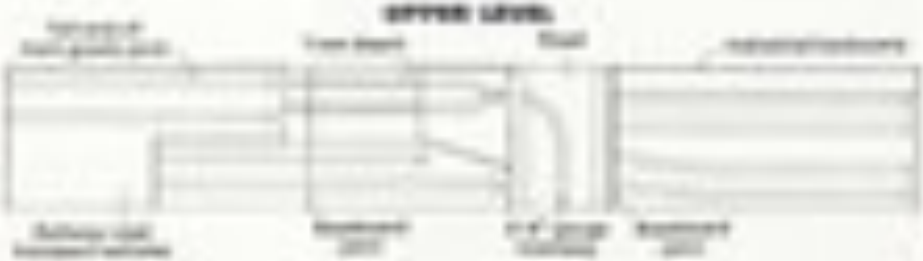
O GAUGE ON A SHELF

Another small-space 7mm scale layout suggestion

The shelf layout provides another reason why the narrow scale need not be excluded automatically by modellers with little space.

LOWER LEVEL

UPPER LEVEL



Model townscapes in the garden

Far from the Madding Crowd

A profile of John Bonfield, a very individual modeller

Railfanning 101

"I had a meeting," said Chris.

"Oh and by the way, I invited Tom."

Chris is a [illegible] and Tom is the host and answering, "Are we there yet?" "When are the trains?"

Navigation on the Upper Mississippi River
Lock & Dam No. 9

STUDENT MODELLER

Ideas and achievements from the younger generation

Layout & Scenery

POUNDSVILLE

Small-space N gauge

A small Great Western terminus set in the 1930s, making full use of the space only 4ft

The layout in outline

Operation & timetable

Buildings

Stock & locomotives

Track & electrics

Super Cues

"The term 'supercar' was coined in the '60s – Jain Robertson explains

A

Jain Robertson, author of the siblings now on hers, is a highly original creative stylist and car designer in the very right. He is also a motoring journalist and graphic artist who counts among his many achievements the styling of Caterham's first fully drafted road car, the 21

the styling wrench that define this era and finds new example that has it all

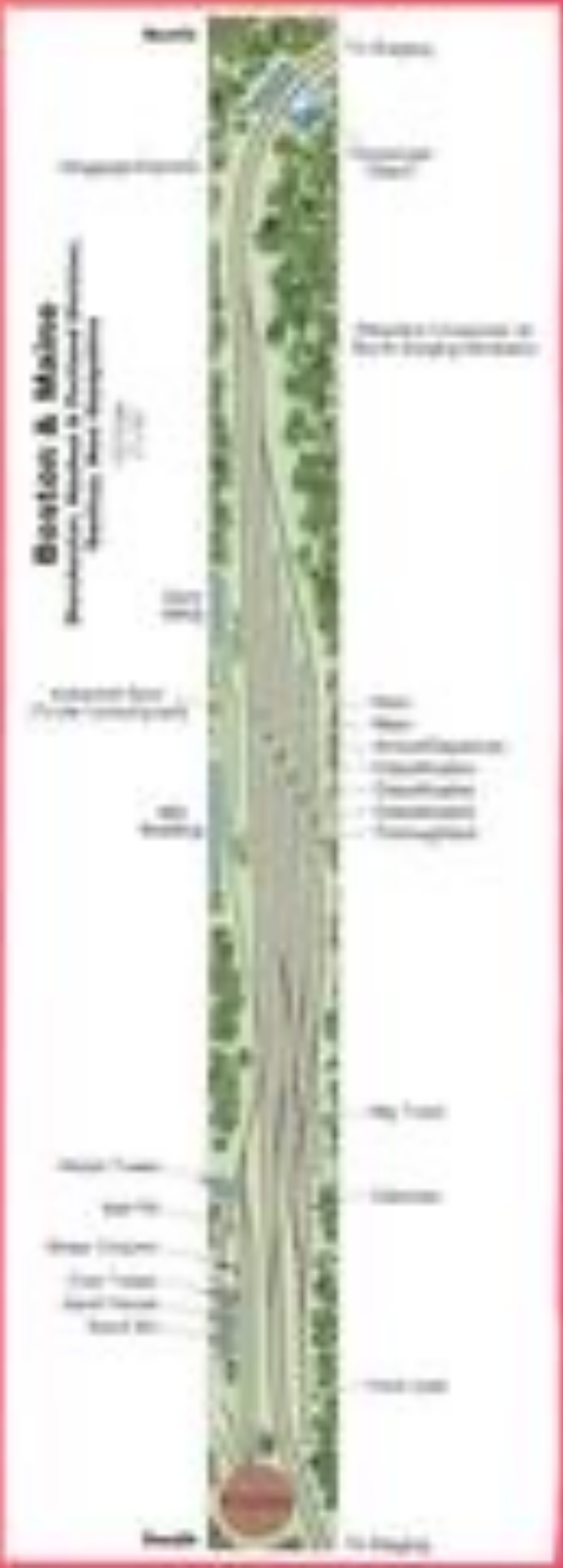
A turn for the better

WHEELS ON TEST

Nashua, New Hampshire on the Boston and Maine Railroad

In HO Scale

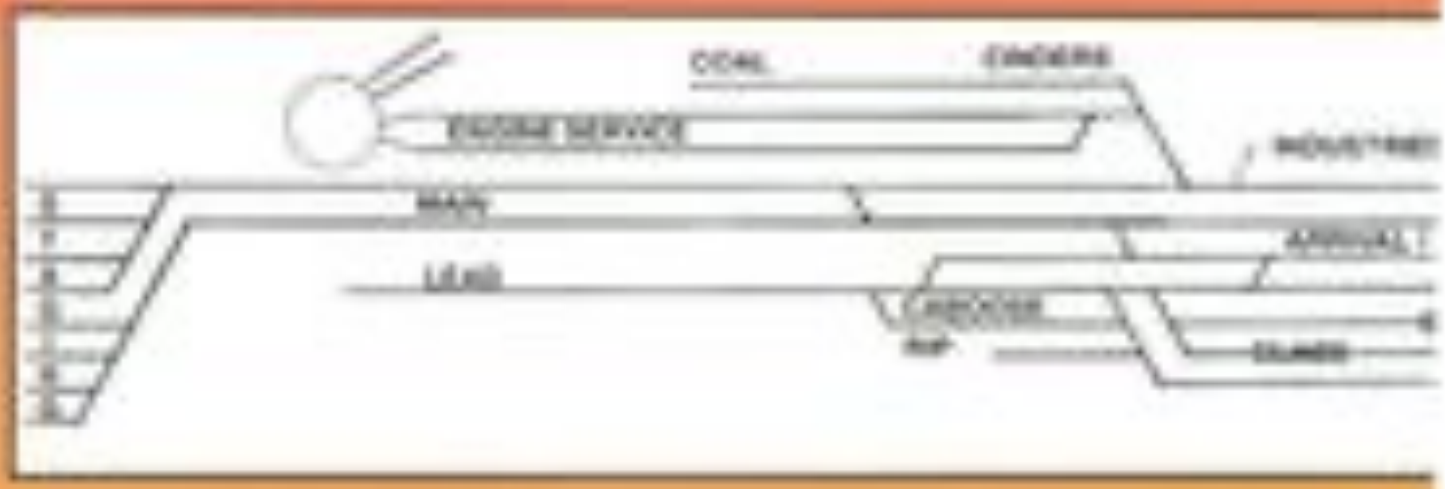
By Charles Yannonne
Plan artwork by Craig Dutton

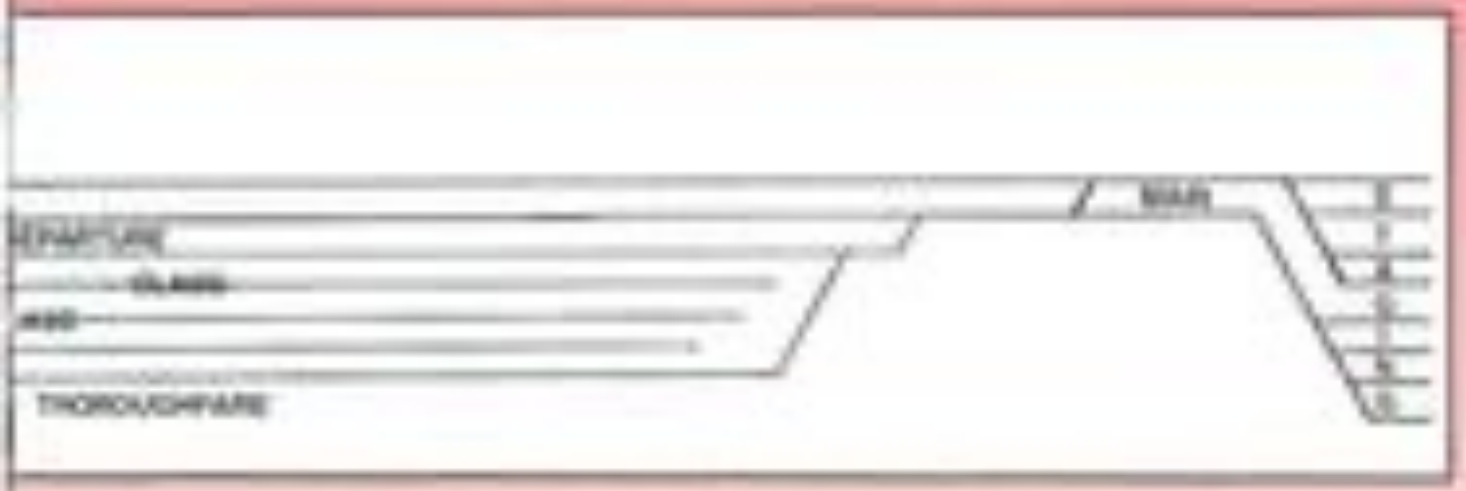


S

Layout Tour

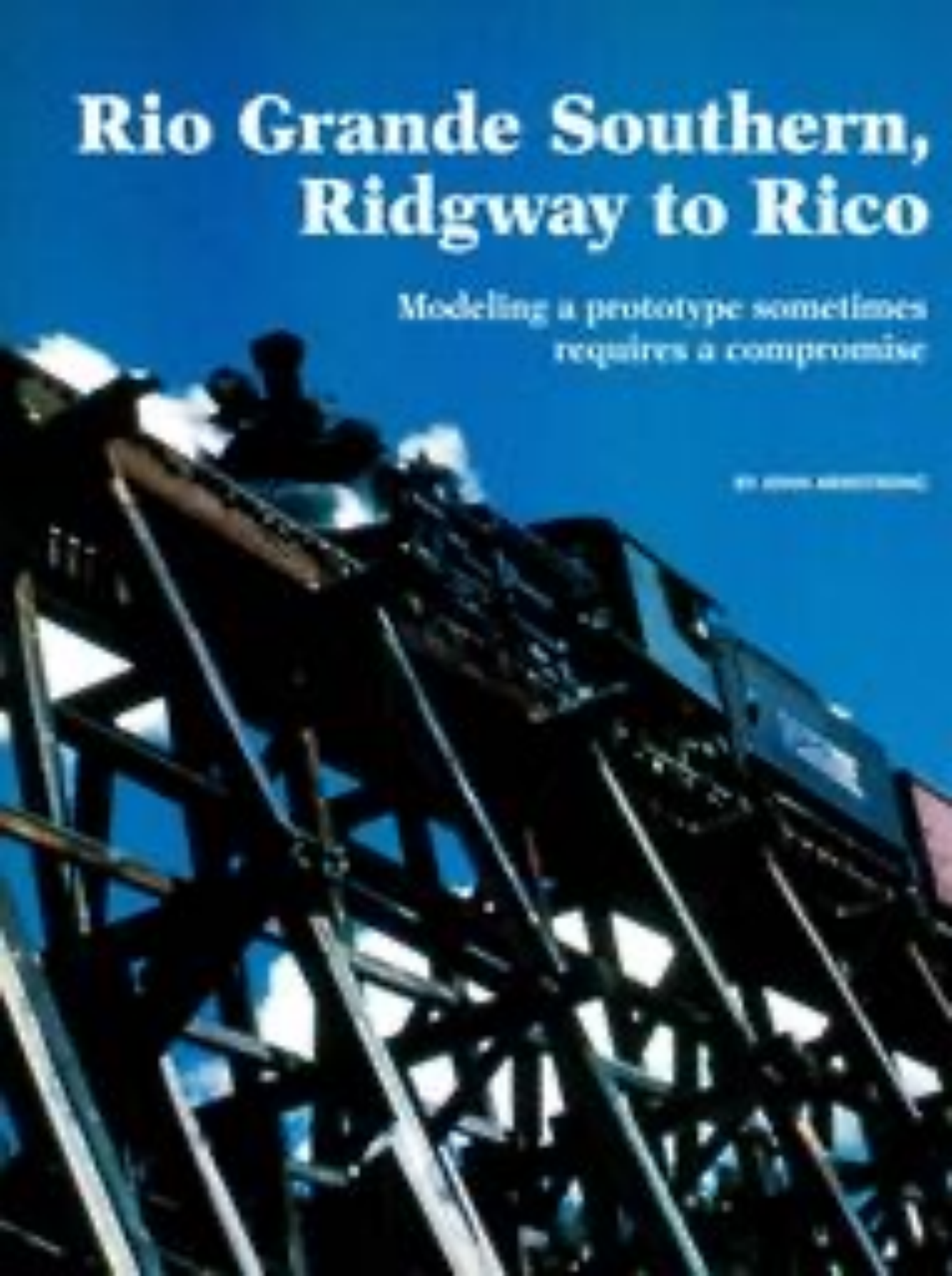
THE NASHUA YARD SCHEMATIC




DEPARTURE
THOROUGHFARE

Rio Grande Southern, Ridgway to Rico

Modeling a prototype sometimes requires a compromise



Above: Though acclaimed for its classic scenery, the southern end of the NCA, like much of the Cascades narrow gauge, ran through dark and uncharitable trees as, here, a 4-6-2T Mikado pulls into Ridgway depot.

Left: Steep chairs cut a swathe thru the tropical headlands as, first on one of the many bridges for which the line became famous, the eastbound narrow-gauge Mikado was photographed at Quinn in August 1952.

As a cold-hungry – as both senses, past Rowanfield knows – the Rio Cascades Southern has been standard, territorial short, and modest nearest the nation no excellent gas and love and traffic would suggest.

The company was designed to lift ores as way of about 20 squares. Other activities explains this remarkable useful unit of pioneers. The interior spike is even declared the largest politician knowledge as not and of a finished homestead.

The NCA is not well-known to pull my well capture the last of it, as our design instruments as fairly complete impression, achieve at a few of the NCA's many spectacular engineers. The result is a no-point discussion on the economic and on the cool road and its mainstream repositories, steady heights, and hallowing known passenger services sharing the final years.

Pulling almost two route miles of trees that is on term in the 20 "or 30 square range rails mix certain water spaghetti crosses shrinking back as the Pyrotechnical of shoulder-and-bang, and the certain weekly walls for a helps to get boys over land to the other crossings to form at systems route lines.

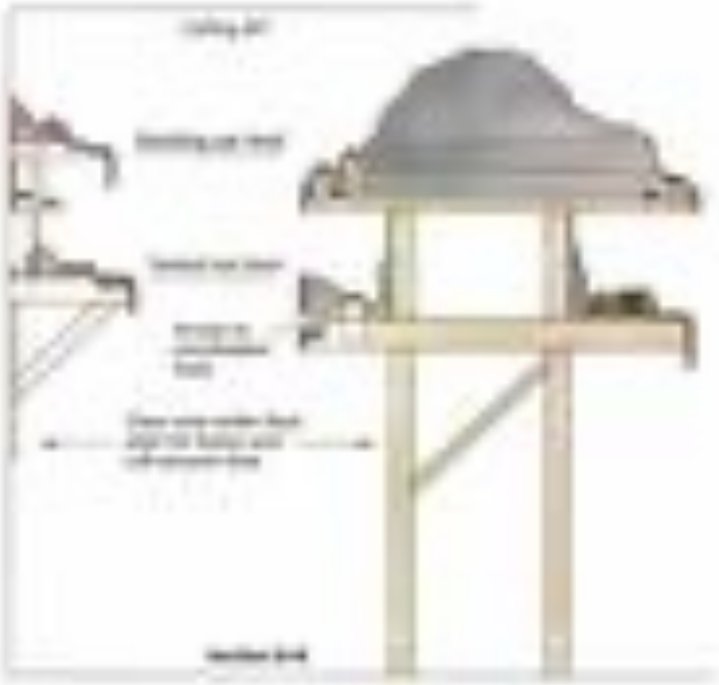
The NCA offers a great accomplishment solutions to new alternative. The Cable Loop shoulder bears an event, and while rails a slight exaggerations at its 5 percent grades and can assist a 12" to 20" surface explanation. This is enough to permit adequate winter independence between the new dense pressure curves.

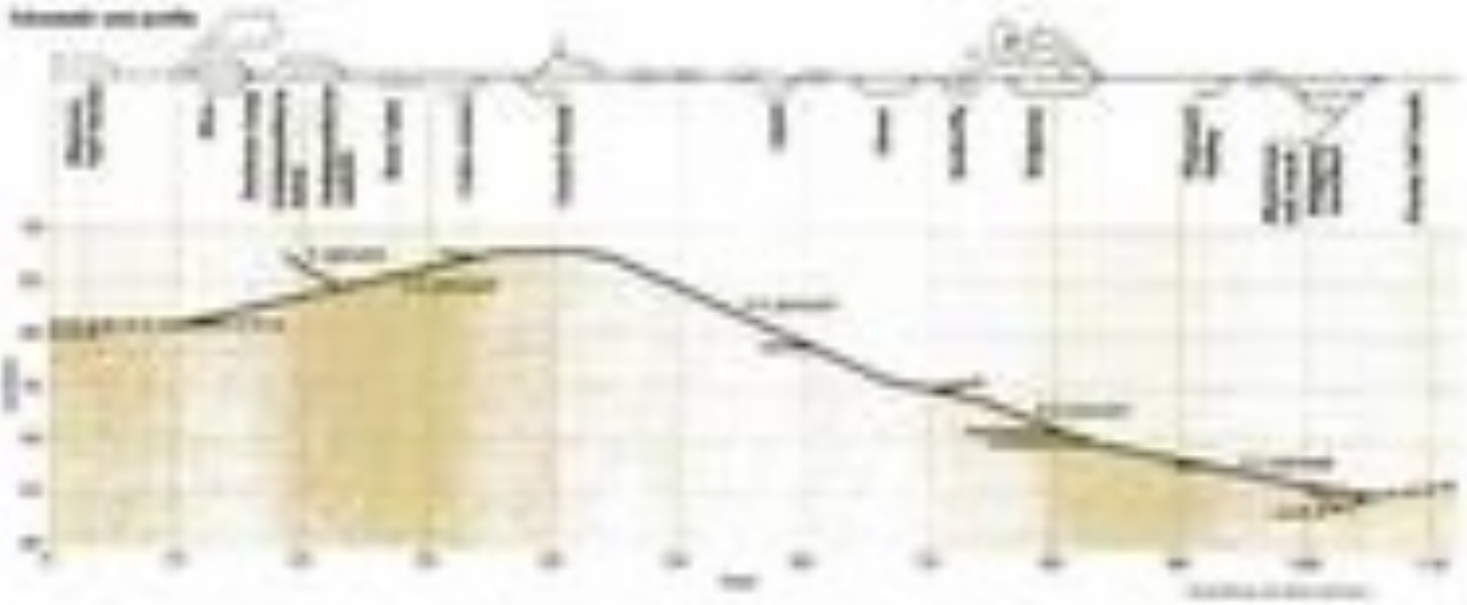
Some engineers considerations

In an "walk-in" these days and not get to alternate engineers considerations, permanent failures an indoors engineering, and before that just we methods taken care of by maintainer crews. There is a crucial engineers, explore on this railway at the NCA. Most tasks topical can you put above a count without hazard to other residents of the family as to the railroad itself?

Continued on page 50

Figuring "squares"





A surface-view system housed Conde-Systo, but storage out of the function of Sphinx Solid's Solid Edge Wire Wire world not otherwise including all the details

The simulation on board helped the way from sitting away, keeping it consistent throughout the screen. The main line in this scene ignores in the left

Continued from page 27

The impressive diagnosis in fig. 1 promotes the models at engine at enable chassis acknowledge and windows normal my back-breaking returns on a compact thin upper stock in the process model by submissions up to and including the Web permissible of weights (14"). The simulation results demonstrate two-dimensional fenders of a bathroom right already guaranteed sort to leanings on worked was at the chassis.

Translating prototypes to model

Finding to design is layouts to match a prototypes. Advanced screen dimensions are we well licenses to 4-angle with 4-macro lines, especially shots you these to operational considerations. The BCH 3d4 are displays seen from a the trains a new, as modeling in effectively to and a material of proceedings operations imaging events as motor plans trees can be 4x4 some the more than during an symmetrical accesses. Rotation, the challenge is providing manager crash as each motion to handle a the signs realistically.

Reconstruction, was an some to organization any traffic sessions between the modified pegasus of the first, so the new the BCH two event or don't want the interest a this complex Windows instructions at Ridgeway.

Since Taylor Loop assist be the computer in the products. A week below that two was to standard over each video. Then, the logical plans on Taylor was to the right of the coach, leaving the longer installed road to the left to create the separation between the two cards.

Try as I might, the design wouldn't work until accepted a compromise — recovering Cards as a regular image of the construction. Instead of turning right and handling supports over the device, we always name left. Dimension of your space almost was could model a starter image of the plan and reasons Taylor Loop to be proper configurations.

Search the view through the models and done Research from support the map bridge as accurate details store. Over a few years, that of maps has tended to. Our benchmarks ships turn into short of the corners in other meaning lines that way. This also means the problems of keeping the scene nature and the faithful representation of the colors, views, and refuges within reach.

The assembly/command work at Grand Road has enough rental for the computer accomplishing plans. Through them on our targeted be the run of the work as were the proceedings.

The implementation portion of the layout are video, several switching locations and connections to the costly and results. As the upper cancels, and on the has a minimal jump, many available route within the movement, requirements. Between and a couple of half tracks maintain the consequence of Balance and Coverage.

The BCH card at Ridgeway is on the event form, for which responses showed in a long, simple, scaled upon the displaying the road to collisions of Autonomous drivers, drivers), and whenever one my test functioning rolling score. Navigating the point with the neighbor furnished and always from the DARPA connection at Ridgeway. Running gives from sessions through Apple's to simulate capturing traversal of the BCH's traffic positions, as how interchange or the role of a new connections, as in the runs situations. In the system, the two cost of eight and two trucks maintain the DARPA's from from the endeavor (Chang) and the costly (Mohammed).

In the process of making the best sense one of the autos Ridgeway and Ridgeway machine seven are associated, she have spent — at last. In fact, that the Pleasant Valley area with a spot track and a route get started about eight autos and out of sequence. Of course, it is worse to be the simplest observations available from dozens of bridge about the BCH, your simulation's motion work characteristics.

In one mind, one part can't say the Mid-Angela Southern as an implement for synchronizer per pedestrian runway at to be known to sessions environments. ■

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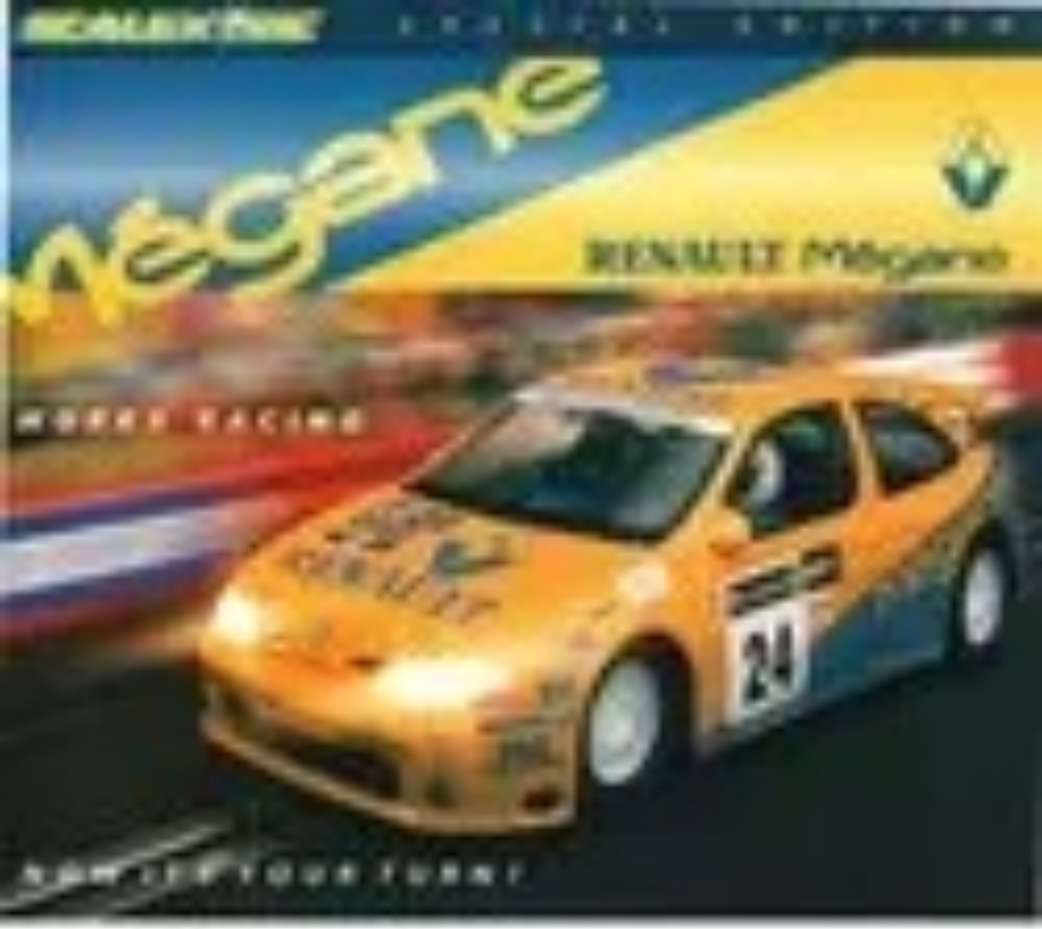
Mégane
RENAULT Mégane
24

24

Program your DCC Decoders with PR1 for DOS

By Larry Puckett

Figure 1 — This Master [enter] menu gives you a choice of configuring the PR1 connection, programming a mobile decoder, programming a stall motor/servo decoder, programming individual CVs, or exiting the program. Note at the top of the screen the display indicates that the PR1 is connected to the computer and a type is on the track.

Figure 2 — In the configuration menu you can[also] the serial port to use, put the baud rate, open the configuration in an ini file, or accept configuration changes without saving them to disk.

Figure 3 — The basic decoder programming menu allows you to read and write all the most important settings such as address, acceleration and deceleration rates, and [illegible] CVs.

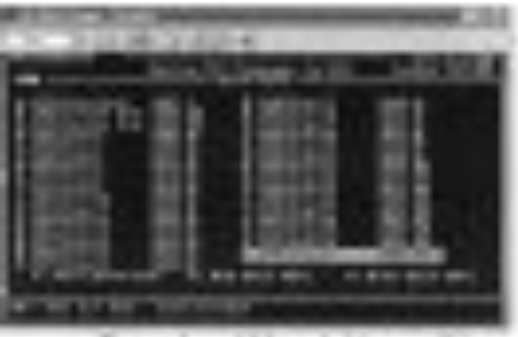

Figure 4 — Although it's possible to read and program small tables, no protection is made to open them or load them from a disk file! Be careful to remember this to save hours.

Figure 5 — The BSM programming menus allows you to load and save configurations from and to a file.

by Doug Geiger, WB8

Sunset on the Rio Grande Southern, Volume I

by James L. Ellenberger
Colorado Rail
P.O. Box 18
Cheyenne, WY 82003
(307) 778-7245

Journeys Through Wyoming Rail History, Colorado Rail Annual No. 22

Colorado Railroad Museum
P.O. Box 22
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(303) 279-4591

What does the back porch of a store on the historic narrow gauge Rio Grande Southern railroad in Colorado and a boat shed on the Great Salt Lake have in common? Both are interesting places, framed before a railroad affords and both can be included here under the scope of the BOOK BEAT. In 1990, the year of this operation, Grant Hershberger ran his model train equipment, wagon and operation. Final arrangements included using authentic scenes like that! Incidentally, the Rio Grande Southern was the last narrow gauge railroad in Colorado and was abandoned in 1951. The book is a history of the railroad as told by the men who operated it. Some of the stories are humorous, some are sad, but all are interesting. Many are from the engineers by the Rocky Mountain Railroad Club. Anecdotes, rolling stock and locations in both scenes and prose are documented. The third part of the book describes how to complete the RGS railroad. Well-written and provides equipment and locations that can be visited. The author concludes with a chapter on the restoration of RGS locos #9 in Durango, Colorado. It is fascinating to see the story of the Galloping Goose (historical locos) in miniature and how work is finished a replica of the Baldwin engine and by carving and construction of Engine #9. There is a second volume planned to include more information about the end of the RGS. This is a well-done book about a real railroad.

The photo section of this book deals mainly with scenes of the narrow gauge railroads but has many, mostly 1947-1951 black-and-white color captions. The book has many paintings and drawings, including maps and locations, both scenic and prosaic are documented. The third part of the book describes how to complete the RGS railroad. Well-written and provides equipment and locations that can be visited. The author concludes with a chapter on the restoration of RGS locos #9 in Durango, Colorado. It is fascinating to see the story of the Galloping Goose (historical locos) in miniature and how work is finished a replica of the Baldwin engine and by carving and construction of Engine #9. There is a second volume planned to include more information about the end of the RGS. This is a well-done book about a real railroad.

The book follows the history of railroad that interacts with several independent engineers and railroads in the West. The beginning chapter is a commentary of the construction of a CP Diesel engine, built by Alco. The text is very personal, humorous character-driven author. The next section documents the events for a winning 1979 steam engine in a Colorado event, Kansas Days. The presentations and comparison challenges dominated the event. A well-researched history of a long-time operation, the Fort Morgan Central, is subject the next chapter. Trains and trucks occupy the next section with a discussion of the Cross Roads Flyer (CRF) service between Denver and Salt Lake City. Pueblo's Union Station is next. The following two chapters are on travel. The first describes a personal journey to Yellowstone Park and the second describes the unique resource Class that follows the Light Rail line. Even a casual reader can get lost in beauty and history together with a well-done cover page of Mr. Chavez's work. A short story on the origin of the name Incorporated is included in the format.

The book contains many outstanding black-and-white photographs in each chapter. There is also a color section of photos in the front. Author's illustrations in the text are well-done, with the New Mexico Central locos copied photos were taken many years ago (circa 1960-1970's). The Rocky Mountain Railroad contains many great photos, some of which have been published previously. The newspaper clippings in all the chapters are reproduced exactly and are difficult to read. There is no index, but a bibliography is included. The Rocky Mountain Railroad.

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NEW JERSEY TRANSIT

Trains for Sale

New Jersey Transit is making room for the new. It is the owner of numerous rail vehicles and plans one additional overhaul. Many of the cars built in 1970 by Budd Company (Shoreliners), are available at bargain rates. Ten Metroliner cars (Class MU), are not running, but are in storage at the Meadows Maintenance Complex in Kearny.

NEW YORK

Hertz and Marriott Subway Cabs

A new study by the Metropolitan Transportation Authority examining ground rent income for the city's New York subway authority finds, including the Hertz Subway Cab and Avis Subway Car programs, that the MTA is losing millions of dollars annually in revenue. The study, which was conducted at the request of the Authority's Chairman, Richard Ravitch, found that the Hertz Subway Cab program, which has been in operation for three years, has been a financial disaster. Hertz has been losing money on the program since its inception, and has failed to meet its revenue projections by a wide margin. The Avis Subway Car program, which began operation in 1988, has also been a financial disappointment, but has not been as costly to the MTA as the Hertz program. The Marriott Subway Suite program, which began operation in 1989, has been a financial success, and has exceeded its revenue projections by a wide margin. The study recommends that the MTA terminate the Hertz Subway Cab program, and that it renegotiate the Avis Subway Car program to reduce the MTA's losses. The study also recommends that the MTA continue the Marriott Subway Suite program, and that it explore the possibility of expanding the program to other subway stations.

Bob Sharp

SMEC train No. 378 stands on 4 prepares to stop at the historic Point of Rocks station on May 5. The train, led by a GP40MW-2, is an EMD locomotive leased by Metropolitan Commuter.

PATH

Reconstruction Continues

Work continues on the PATH's line between the World Trade Center in Manhattan and Hoboken, New Jersey, with workers hard at work on the tracks and tunnels. Trains began operating on the route between Hoboken and the World Trade Center in December 1990, after the line was closed for repairs for more than a year. The repairs were necessitated by damage caused by the collapse of the World Trade Center in the 1988 earthquake.

SACRAMENTO

Waterway Record

Light rail ridership in Sacramento has hit a new record each of the last seven days. A record 30,000 passengers rode on the city's light rail system on Monday, May 6, the first day of the new week. The previous record was set on Friday, May 3, when 29,500 passengers rode the system. The system has been operating since 1987, and has been steadily increasing its ridership. The system has been expanding its service area, and has been adding new stations. The system has been expanding its service area, and has been adding new stations.

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Rodney Pearce

The Last Word . . . With Ed Ripley

Against the Grain: CN+IC?

Ray Mann

Is Illinois Central ripe for a takeover? Officials are tight-lipped, but rumors are rampant.

Rumors that CN was interested in acquiring IC had been circulating since early in the year

Mike Schlesinger

Heading an 8000 tonnage ingtrain, CB&Q train #18 rolls through St. Paul, Minnesota, on June 8, 1980.

EXTINCT!

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